

Mesolithic Bows from Denmark and Northern Europe



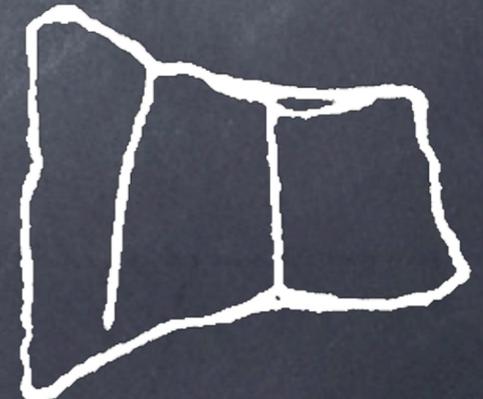
by Jan H. Sachers

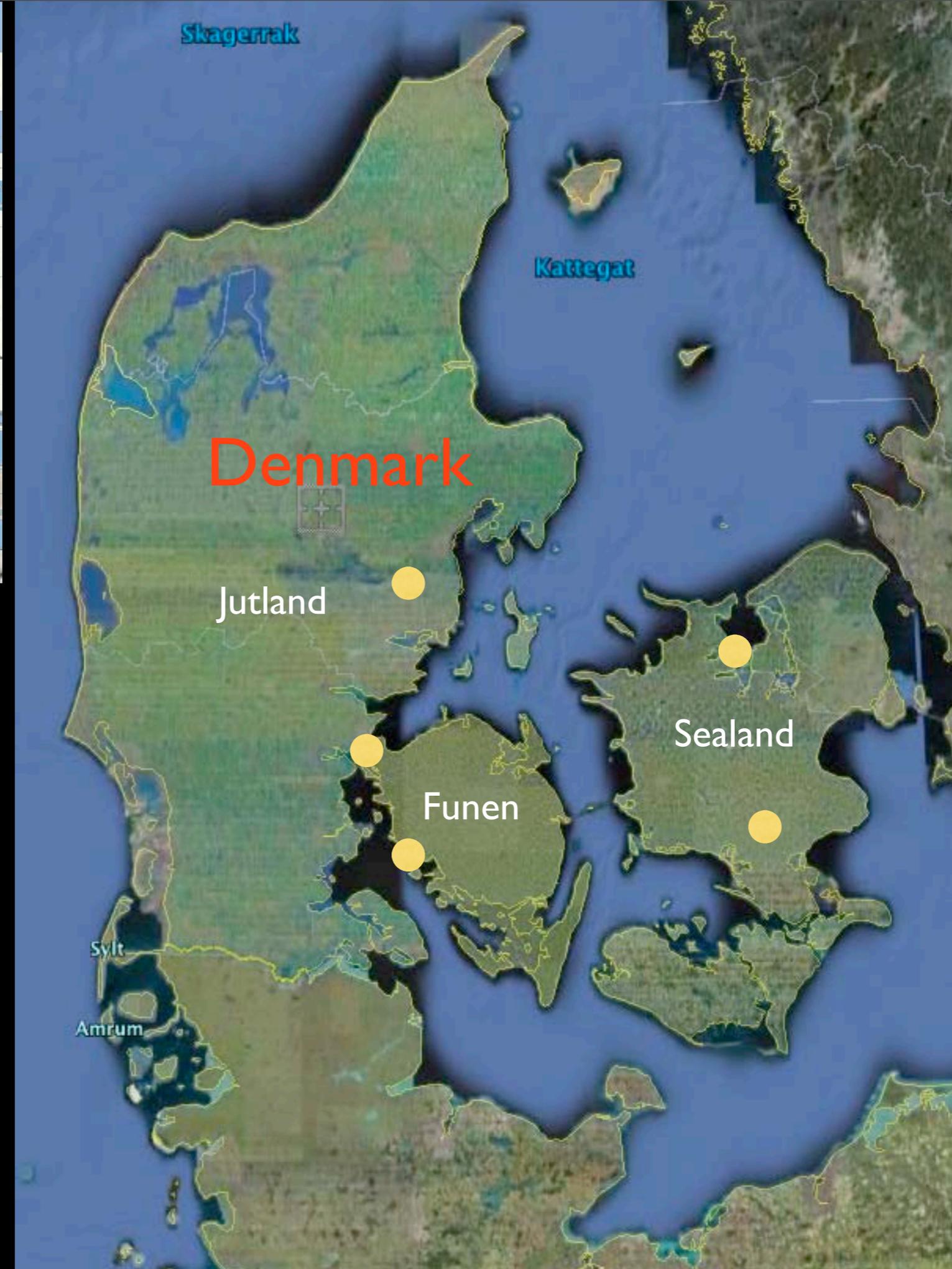
Overview

- ▶ Part 1: Geographical and Chronological Overview
- ▶ Part 2: Mesolithic Bow Design
- ▶ Part 3: Mesolithic Bow Technology
- ▶ Part 4: The Heritage of the Mesolithic Bows
- ▶ Conclusions

Part 1

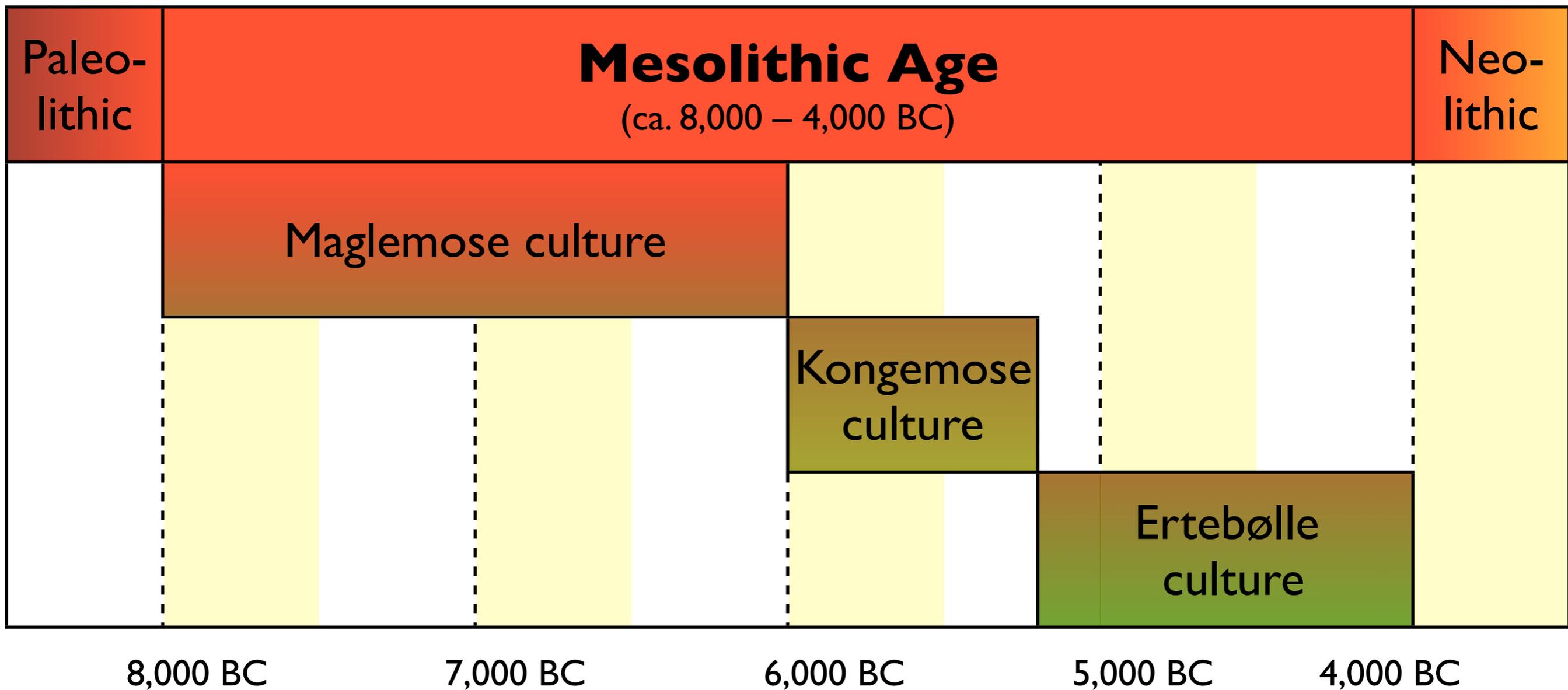
Geographical and Chronological Overview





● Mesolithic find site

The Mesolithic Age in Denmark



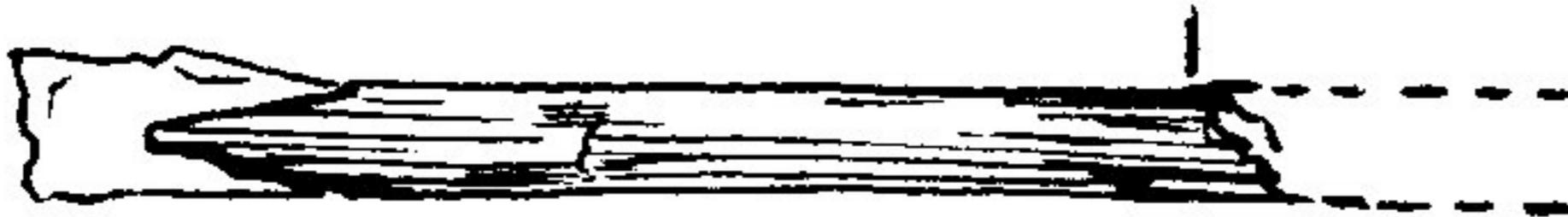


A group of mesolithic hunters

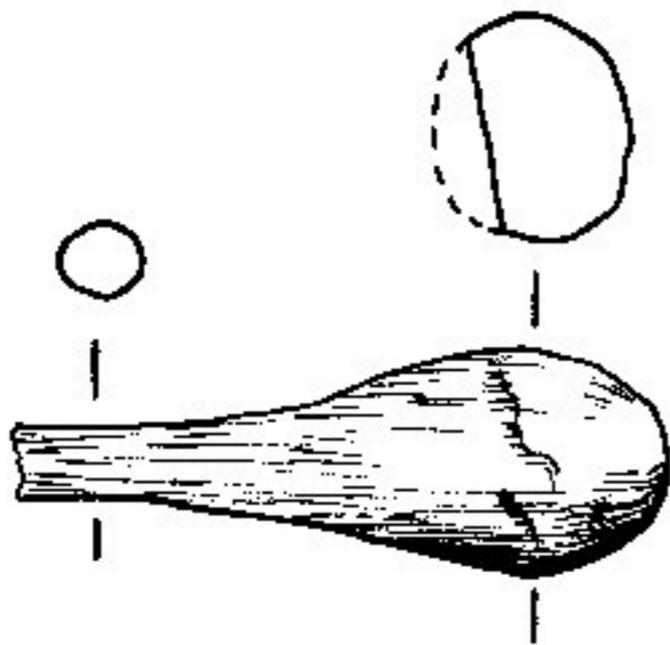
Mesolithic Cultures in Denmark

- „Coastal cultures“
- Hunter-gatherers
- Stone tools
- Boats and paddles, fish hooks, fish traps
- Flint arrowheads
- Bows

Mesolithic Arrowheads



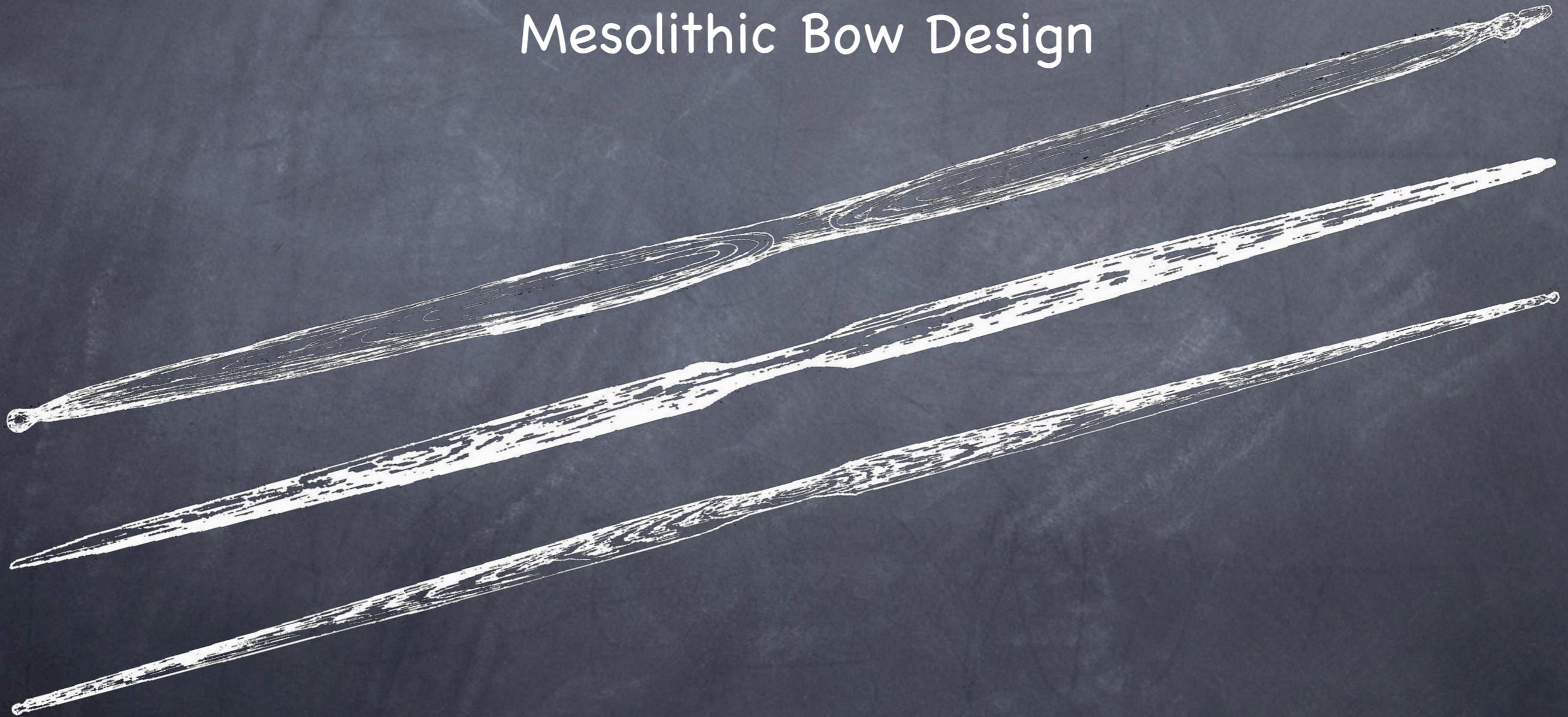
Flint „tranchet point“



Wooden blunt for hunting birds and small game

Part 2

Mesolithic Bow Design



Finds

- ca. 20 complete bows or fragments
- ca. 12 find sites in Denmark, Southern Sweden, Northern Germany and the Netherlands
- Dating from the 7th to the 3rd millennium BC
- Bows of a common design with unique characteristics

The Holmegård Bow



- ca. 6,500 BC (Maglemose culture)
- Length: 152 cm
- Max. Width: 4.4 cm
- Thickness: 1.8-1.9 cm
- Grip: 2.7 cm wide and 2.5 cm thick

The Holmegård Bow



- One complete bow and one fragment found
- The oldest bows discovered to date
- No experimental design, but „tried and true“
- Archetype of mesolithic and early neolithic bow design

The Ringkloster Bow



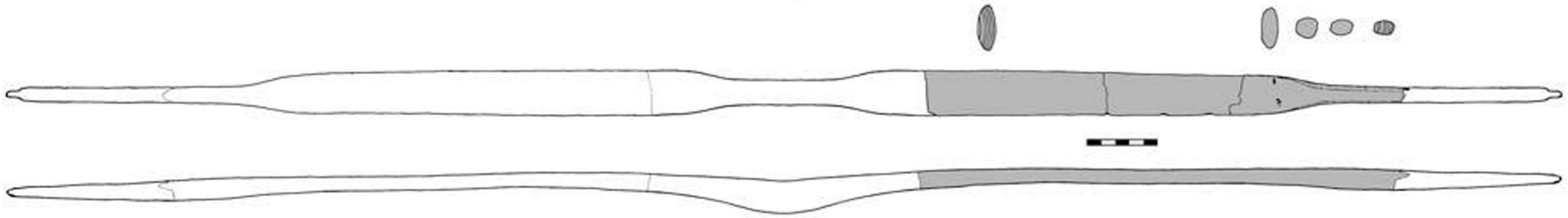
- ca. 5,400-3,600 BC (Ertebølle culture)
- Length 154 cm (one limb ca. 5 cm longer than the other)
- Max. Width: 3.4 cm
- Depth: 1.5-1.65 cm
- Grip: 2.3 cm wide and 1.5 cm thick

The Ringkloster Bow



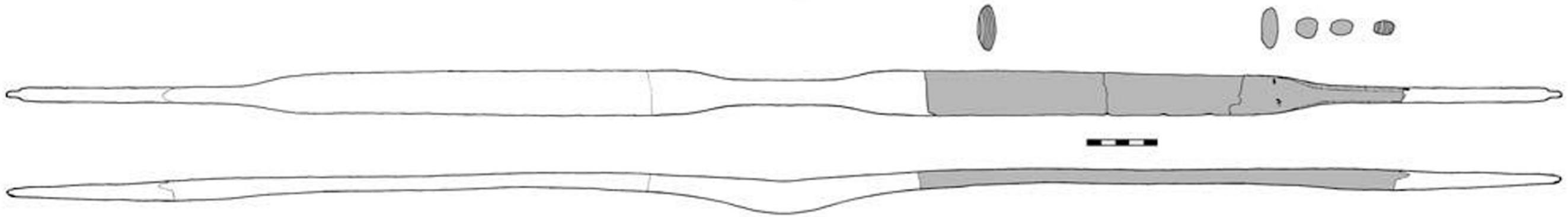
- No deepened handle-section
- No nocks
- Probably never put to use
- A failed experiment?

The Møllegabet Bow



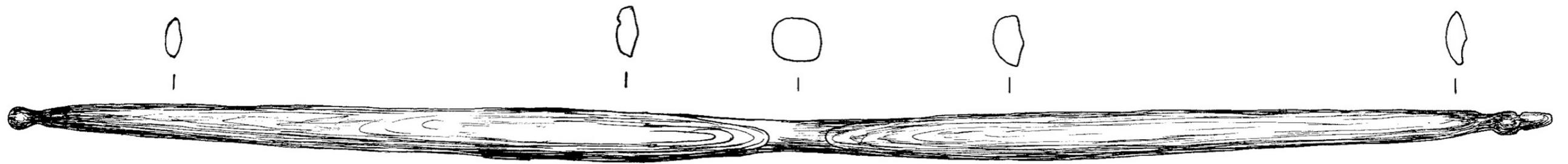
- ca. 5,400 BC (Ertebølle culture)
- Length: ca. 115 cm (fragment 35 cm)
- Max. Width: ca. 3.3 cm
- Depth: 1.25-1.45 cm (fragment)

The Møllegabet Bow



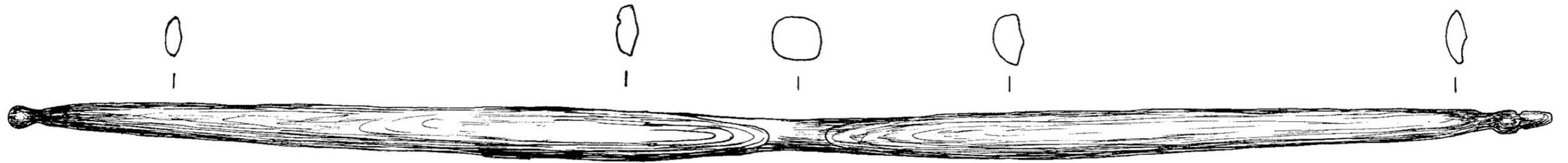
- Often confused with the bow from Holmegård
- A bow for children or juveniles?
- Pronounced shoulders app. 2/3 down the limbs
- Unique example of that special design

The Tybrind Vig Bow



- ca. 5,300-4,000 BC (Ertebølle culture)
- Length: 167 cm
- Max. Width: 3.8 cm
- Depth: 2 cm, tapering to 1.2 cm
- Grip: 3 cm wide and 3.2 cm deep

The Tybrind Vig Bow



- The nocks are of unique shape

Other bows

- **Hardinxveld-Giessendam** (NL): ca. 4,900 BC
- **Ronæs Skov** (DK): ca. 4,300-4,100 BC (Ertebølle culture)
- **Agernæs** (DK, Ertebølle culture)
- **Vedbaek** (DK, Ertebølle culture): ca. 194 cm
- **Muldbjerg** (DK): ca. 3,000-2,750 BC (neolithic), ca. 160 cm long & 3.6 cm wide
- **Förstermoor/Satrup** (GER, Ertebølle-Ellerbek culture): ca. 115 cm long & 3 cm wide

Characteristics

- made of Elm wood (*Ulmus glabra*)
- deep and narrow grip section
- wide and flat limbs
- the widest parts of the limbs are above and below the handle
- limb cross-section of a flat D shape, with rounded back and flat belly

Part 3

Mesolithic Bow Technology



Mesolithic Bow Technology

- Elm wood only inferior to yew
- Yew wood only available in the North from the 3rd millennium BC
- Great length to increase draw weight and precision
- Broad limbs to avoid breakage

Mesolithic Bow Technology

- Widest part in area of greatest stress
- Narrow ends to reduce weight and increase speed of cast
- Deep, narrow grip to minimize handshock, for better comfort and because of archer's paradox



Reconstruction of Holmegård bow by Hilary Greenland

by courtesy of the Ashmolean Museum, University of Oxford/GB

Bow Building in the Mesolithic Age

- Stone tools less efficient than metal ones
- Small trunks with narrow growth rings
- De-barked outside used as back
- Work only on belly side

Bow Building in the Mesolithic Age

- ➡ Best material available
- ➡ Efficient methods
- ➡ Optimized, highly efficient design

Part 4

The Heritage of the Mesolithic Bows

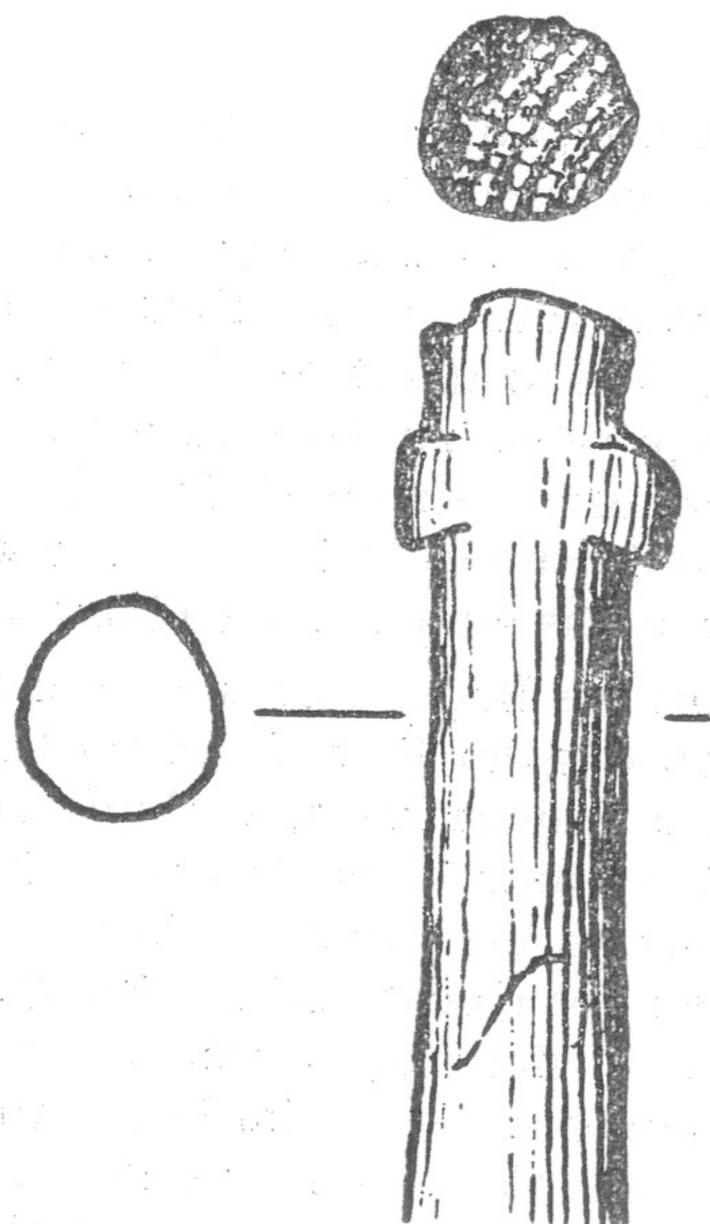
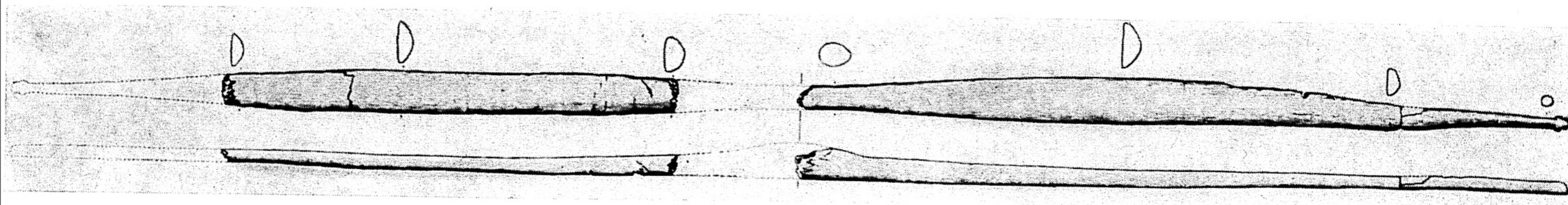


The Heritage of the Mesolithic Bows

- Yew spreading to the North
- Used for bows from the 3rd millennium BC
- Finds from the Netherlands and Northern Germany
- New material, but „old“, proven design

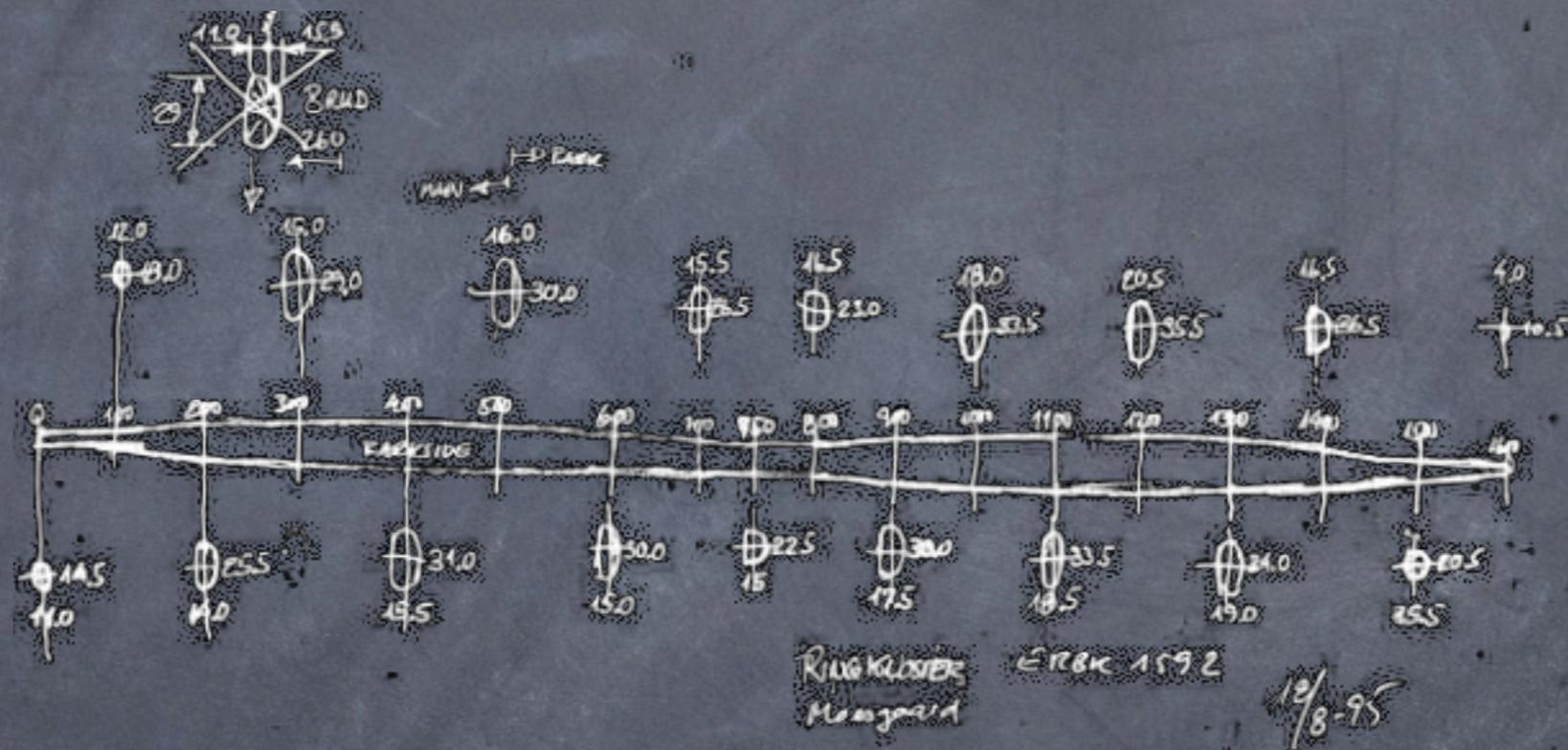
Yew Bows of Holmegård Design

- **Bodman** (GER), ca. 4,000-3,000 BC,
ca. 150 cm long & 3.7 cm wide
- **Vrees** (GER), ca. 3,000-2,000 BC,
ca. 172 cm long & 5 cm wide
- **Ochsenmoor** (GER), ca. 2,500-2,300 BC,
ca. 146/126 cm long & 3/3.3 cm wide
- **De Zilk** (NL), ca. 2,000-1,700 BC,
ca. 160 cm long & 5.3 cm wide



The yew bow from Vrees (GER)
ca. 3,000-2,000 BC
ca. 172 cm long & 5 cm wide

Conclusions



Conclusions

Bowyers in the mesolithic age ...

- used the best material available to them
- in a most efficient manner
- to build bows of highly sophisticated, very efficient design

Conclusions

- The tried and true design was kept even when better material became available
- Bows of Holmegård design were the weapon of choice in mesolithic Denmark and Northern Europe
- Dominant for at least 5,000 years, from the 8th to the 3rd millennium BC

Thank you for your attention.

Questions?