• many “centers”
• Fertile Crescent
• Founder Domesticates
  – cereals: Emmer, Einkorn, barley
  – pulses: lentils, peas
  – dogs, sheep, goats
• IDing domesticates
  – large seed size ($e$)
  – semi-touch rachis ($h$)
  – quantity of seeds ($\lambda$)
  – small body size ($h$)
  – excess males ($h, \lambda$)

• SW Asian sequence
  – Kebaran 14.5-12.5 ka
    • simple hunter-gatherers
  – Natufian 13-9.7 ka
    • complex hunter-gatherers
    • Abu Hureyra 11-13 ka
  – PPNA 10.3-9.5 ka
    • mature agriculture
    • Jerico, Netiv Hagedud, Ganj Dareh
  – PPNB 9.5-8 ka
    • proto-cities?
    • Çatalhöyük (10.5-8.5 ka)

“centers” of domestication synchronous, independent origins of agriculture

SW Asia & the “Fertile Crescent”

high biodiversity

SW Asia & the “Fertile Crescent”

Anatolia

Zagros Foothills

Levantine Corridor

Med: cool wet winters, hot dry summers
Con: cold dry winters, cool dry summers
Mon: cold dry winters, warm wet summers

Tigris & Euphrates
• Founder Crops
  – Emmer and Einkorn wheat
  – barley
  – legumes (pulses): peas, lentils

• Founder Animals
  – sheep and goats
  – dog

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Identifying Domesticates – large seed size $(e)$
advantageous (to plants) only with humans intervening in reproductive cycle…
large seeds come at cost to plant…too much energy devoted to reproductive cells relative to G & D
Identifying Domesticated Cereals – semi-tough rachis ($h$)

advantageous (to plants) only with humans intervening in reproductive cycle…

limits dispersal ability in natural setting

Identifying Domesticated Cereals – quantity of remains ($\lambda$)

Identifying domesticated animals – body size ($h$)

toe bones from domestic (left) and wild sheep (right)
Ganj Dareh, Iran, ca. 10 ka

IDing wild animals: mortality profiles ($\lambda$)

preferred

Easy to capture
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• Kebaran 14.5-12.5 ka
  – simple hunter-gatherers
    • microlithic tools and gazelles...
    • what other characteristics?

Natufian 13 – 9.7 ka

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  – small body size (h)
  – excess males (h, λ)
Evidence for what behavioral changes?

decorated sickle handles & microblades with sickle polish

saddle querns

Reconstructed distribution of wild cereal grasses at onset of Younger Dryas

Natufian @ Abu Hureyra, Syria, 13-11 ka

carbonized cereal remains in moderate quantities not wild? not full domesticate? proto-domesticate?

Animals during the Natufian experimentation with crops, but still heavy reliance on hunting
Natufian child buried with a dog, 12ka

Dogs domesticated from wolves in late glacial, > 14ka

World’s earliest domesticate? (carnivorous turkey!)

Natufian sedentary village life at Abu Hureyra, Syria (1ha)
11-13 ka: cause OR consequence of proto-domesticates?

Greater social complexity during Natufian: cause OR consequence of greater reliance on proto-domesticates?

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  – Çatalhöyük (10.5-8.5 ka)
• PPNA 10.3-9.5 ka
• Sites 3-8 ha in size
• simple → mature agriculture
  – simple = intensive use of single crop to supplement diet
    • end of Natufian and early PPNA
  – mature = use of multiple crops in complex sequence as major component of diet
    • wheat, barley, peas, lentils
    • large quantities of grains
    • crop rotation and fallow system
• spatial and cultural relationship with the Natufian
  – burial practices, house shapes, agricultural technology

Animals in the diet during PPNA
reliance on hunting, but sheep-goats rapidly domesticated at end!!!

• Consequences of “mature” agricultural complex
• Large complex settlements (with fortifications?)
  – Jericho (PPNA 10.3-9.5 ka)—tower and “moat”
  – communal labor organization
  – keeping people in or out?

“Domino Effect” during PPNB
cattle and pig domesticated soon after sheep-goats
Çatalhöyük Reconstruction; 12 ha, 1000 rooms
large villages with extensive ceremonial
functions; proto-cities?