Ancient Pastoralism High and Low: Mountain nomads and their link with desert economies of Inner Asia

Dr. Michael Frachetti
Department of Anthropology
frachetti@wustl.edu
Why focus on nomadic emergence along the Inner Asian Mt. Corridor?

Region around Luishui
(Northern piedmont Kunlun Mts, southern Taklamakan)
The formation of Inner Asian Mountain networks: Nomadic Landuse, Mobility, and Interaction
Regional Scale Variation in site groups:
Settlements + Burials + Rock Art

Possible Analogy?

Lowland (Winter) Settlements
Pasture quality: Altitude and Seasonality

*Red & green indicate high yield grass

July
Seasonal Pasture Dynamics in the Koksu Valley & Dzhungar Mts

September

December
Calculated nomadic mobility and network pathways

Range of migration paths according to pasture potential

Simulated pastoralist network formation in the Dzhungar Mts, ca 2500 BC

Ecological pattern of seasonal mobility established nodes of Social Interaction

Rich Pastures 1500-2500m

Lowlands < 800m

Begash

Koksu River

(Frachetti 2006, 2008)
How far did pastoralis networks extend across Inner Asia? How was it transformed through time?
Piedmont zone, SE Kazakhstan

Begash settlement, burial ground

Bronze Age

Iron Age

Medieval Era

4000 yr continuity of Site Occupation (Radiocarbon Chronology)

Frachetti & Mar’yashev 2007 *Journal of Field Archaeology*, 32(2)
Defining the network nodes

Excavations at the Prehistoric Settlement
BEGASH (2002-2006)
Excavation data (2002-2006)

- Bronze Age Burial, 1700 BC
- Early Bronze Age Wall foundation, 2450-2000 BC
- Iron Age burial in the settlement area, 760-500 BC
- Iron Age Occupation Level
Frachetti & Mar'yashev 2007 *Journal of Field Archaeology, 32*(2)

**Begash Settlement Excavations 2002-2006**

**Phase 1 (a&b) (2500-1700 BCE)**

*Areas Not Excavated to BA levels*
Household Zooarchaeology from Begash

Herd Structure among Eurasian pastoralists (3000 BC – 1600 AD)

% of sheep/goat, cattle and horse in Begash according to phases of occupation, based on fragment counts (NISP).

Frachetti and Benecke 2009. From sheep to (some) horses: 4000 yrs of herd structure at Begash, Kazakhstan Antiquity 83 (322): 1023-37
The cremation burial context

Funerary Fire Pit
The Earliest Wheat & Millet in Central Eurasia

Wheat (*Triticum aestivum/turgidum*)

Broomcorn Millet (*Panicum miliaceum*)

2300-2100 BC

Ritual & Agricultural transformations along the IAMC

Domestic wheat was transferred to China through Inner Asia ~2300 BC

Regional Economic Transformation:
Agricultural + Pastoralism at Talgar, Kazakhstan, 700 BC (PI: Dr. Claudia Chang)

Iron Age settlement, Tuzusai

Grape
Broomcorn (left) and Foxtail Millet
Wheat
Naked and Hulled Barley

Photo: P. Tourtellotte

Botanical analysis and photos:
Robert Spengler, Ph.D. Cand. Washington Univ. St. Louis

Pastoralist diversity: Tasbas, Semirech’ye

Excavations by Paula Doumani
(Ph.D. Candidate, Washington Univ. St. Louis)

Cremation interment 2840-2500 BC

Earliest documented Agriculture, ca. 1400 BC

Late Bronze Age pottery

Doumani, Frachetti, Spengler, Mar’yashev – (forthcoming)
Xiaohe Cemetery, Xinjiang
(wheat in ritual context, ca. 1800 BC)

**Also, elaborate textiles

(presented as food offerings)

Images Courtesy of R. Flad
Textile impressed ceramics at Begash
2450-50 BC

Early textiles from Begash (cast textiles from ceramics)

2540-2000 BC

ca. 1600 BC

Doumani, P and Frachetti, M 2012. Bronze Age textile evidence in ceramic impressions: weaving and pottery technology among mobile pastoralists of central Eurasia *Antiquity (in press)*
Finely Woven Textiles

Pazyryk Plain Weave
ca. 300 BC
Warp = ~11-15 / cm
Weft = ~17 / cm

After Rudenko 1968

Ca. 350 BC –
Fine woven Textile fragment from Begash

Common people...
uncommon textiles....

Fine linen?

Stitch density = 1600/cm²

*In the range of Medieval Silk (Crowfoot et al. 2004)
Twill Weave textile impression
BEGASH ca. 1000 BC
Early Bronze Metallurgy in the Dzhungar Mountains

Ceramic Moulds for Bronze Ingots SE Asia

TC 16 Mould
TC 9 Mould
TC 17 Crucible
TC 22 Mould

Bronze** semi-spheroid ‘Ingots’ From Dali

Top down view
~5cm
Profile view

Megalithic enclosure (Shrine or Sanctuary?)

Bronze Age Burial Ground Settlement area
Upland Mining at Dali?

Stone tools found at highland BA mining site
Mastau Baj I, Eastern Kazakhstan Mts
(ca. 2000-1500 cal BC)

After Stollner et al, 2011 Tin from Kazakhstan – Steppe Tin for the West?
In Anotolian Metal V, p. 231-51
Localized mixes of western and local (indigenous) metallurgy [in NW China] “suggest that contacts were likely indirect, sporadic, and small scale” (Mei Jianjun 2009, 218)

Tin-Bronze Age Casting technology has an early genesis in the Altai region, at least by the early 2nd millennium BC and quickly was translated eastward and westward across Inner Asia (e.g. the Seima-Turbino Bronze repertoire, The Ordos Bronzes etc.)
Arenas of Highland Participation along the IAMC

- Pastoralism
- Agriculture
- Craft vocabulary
- Metallurgy
Acknowledgments

Kazakhstan Funding Sources (1999-Present)
• National Science Foundation (USA)
• Louis J. Kolb Foundation
• Social Science Research Council (SSRC)
• Washington University in St. Louis
• Mary Morris Foundation
• Fulbright Foundation
• American Councils (ACCELS)

Uzbekistan Funding Sources (2009-Present)
• National Science Foundation (USA)
• National Geographic Society/Waltt Foundation
• Washington University in St. Louis

International Partners:
Kazakhstan
Dr. Alexei Mar’yashev
(project co-director 1999-present)
Dr. Baurzhan Baitenayev
Director Inst. of Archaeology (2009-present)
Dr. Karl Baipakov,
Director Inst. of Archaeology (1999-2009)
Dr. Norbert Benecke
Archaeozoology, Deutches Archäologisches Institut

Graduate Student Specialists:
Robert Spenger, Archaeobotany
Paula Doumani, Ceramicist
Lynne Rouse, GIS/ Survey specialist
Taylor Hermes, GIS/ Excavation Field director

Contact: Dr. Michael Frachetti
Dept. of Anthropology
Washington University in St. Louis
frachetti@wustl.edu  www.saie.wustl.edu