The Peopling of Siberia: Demographic and Evolutionary Issues

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Objectives of Talk

- Describe population histories of Kamchatka and the Altai region
- Discuss the evolutionary and demographic influences on patterns of biocultural variation
- Provide brief overview of migration history of Siberia and the Americas
Figure 1. Distribution of native ethnic groups in Siberia as it was more than fifty years ago. The map is based on Levin and Potapov.\textsuperscript{5} Shaded areas are colonized predominantly by Russians.
Northeastern Siberia
Ethnic Groups in Koryak Autonomous Region

- Russian: 66%
- Koryak: 17%
- Ukrainian: 8%
- Chukchi: 4%
- Itelmen: 3%
- Even: 2%
Dialect Subgroups of Koryaks and Itel’men
Modern Human mtDNA Network
Founding mtDNA Lineages in Native Americans
Fig. 2. Contemporary worldwide distribution of Y chromosome groups in 22 regions. Each group is represented by a distinguishing colour. Coloured sectors reflect representative group frequencies. Pacific basin not to scale. With respect to Table 1 of Underhill et al. (2000), Hunza and Pakistan+India are combined. In addition the results of Native Americans have been subdivided in North ($N=14$), Central ($N=13$) and South ($N=79$).
Haplogroup Frequencies in Koryak Subgroups

- Aluitor
- Karagin
- Palan

Legend:
- A
- C
- D
- G
- Y
- Z
Haplogroup Frequencies in Koryak Subgroups

- Maritime
- Reindeer

Legend:
- A
- C
- D
- G
- Y
- Z
Chukchi Haplogroup Frequencies
Chukchi Haplogroup Frequencies
South-Central Siberia
30,000-40,000 ybp
Native American Ancestors
Prehistory of Altai Region

- Indigenous Altaians number around 45,000
- Turkic-speaking with ~Mongolian ancestry
- Originally nomadic or semi-nomadic herders and hunters
- Northern and southern tribes in region
- Turkanate khanate ruled region from 6th to 10th century AD; Mongolian khanates rules from 13th to 18th centuries
- In 18th century, Russians assumed control of the region, with some Chinese resistance
Fig. 1. Geographic location of villages in Republic Altai
Fig. 3. The tribal structure of the population of South Altaians from the Mendur-Sokkon village.
Haplogroup Frequencies in South-Central Siberia
Distribution of mtDNA Haplogroups in the Americas
Evidence from mitochondrial DNA haplogroups, or lineages, suggests several alternative migration scenarios for the New World:

1) haplogroups A-D and perhaps X from southeast Siberia;
2) haplogroups A-D from both the Baikal and Amur River regions;
3) a possible separate East Asian migration involving haplogroup B; and
4) a possible separate Eurasian migration involving the haplogroup X.
Y-Chromosome Haplogroup Frequencies in Native Siberians

- M45
- M3
- Tat/7C
- M17
- S4Y
- M1
- M89
- M119
- M9

Locations:
- Nganasans
- Sel'kups
- Kets
- Altayans
- Tuvans
- Tofalars
- Evenks
- Buryats
- Evenks
- Nivkhs
- Ulchi
- Nanai
- Udegeys
- Mongolians
- Sib. Eskimos
- Chukchi
- Yukagirs
- Evens
- Koryaks
- Itel'men
- Ainu
Distribution of Y Chromosome Haplogroups in NE Siberia and North and Central America
Y-chromosome New World Migration Model
Figure 5. An interpretation of the origin and dispersion of Siberian populations based on HLA allele frequency data.
Directed dispersals, range expansions and long-distance colonizations bound by common ethnic and linguistic affiliation shaped genetic landscape of Siberia.
Siberian pattern of reduced haplotype diversity within populations combined with high levels of differentiation among populations may be a general feature characteristic of indigenous groups that have small effective population sizes and that have been isolated for long periods of time.
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