Genetic history of the Uralic-speaking peoples as seen through the paternal haplogroup N and autosomal variation of northern Eurasians

Summary

The Uralic linguistic family has been postulated for more than a hundred years with a current distribution area spanning from Europe to West Siberia. The prehistory of Uralic languages and their speakers has been under scrutiny of several generations of scientists from a variety of scientific fields. Numerous hypotheses have been proposed regarding their common origin, dispersal routes and possible homeland, but these questions continue to remain scientifically disputable.

A clear disruptor in the pattern of geography-dependent distribution of Y-chromosomal paternal lineages is haplogroup N that unites populations across entire north Eurasia and describes a fair share of Uralic-speaking males in both northeastern Europe and west Siberia. First aim of this thesis was to apply novel DNA re-sequencing approach to resolve the inner phylogenetic structure of haplogroup N and estimate coalescent ages along with geographic distribution of its inner subclades. Second aim was to test for a common autosomal genetic substrate between Uralic speakers using novel statistical methods.

The results suggest hg N to initially originate from North China or Mainland Southeast Asia and contain several novel subclades with distinct phylogeographic spread. One such subclade, N3a3’6 within subhaplogroup N3, displays an expansion time of 5000 years, but has a remarkably wide geographic distribution ranging from the eastern shores of the Baltic Sea to Mongolia and Pacific Russian Beringia, encompassing a considerate fraction of men from all major linguistic families in north Eurasia.

Whole genome data shows a small, yet significant autosomal genetic component of possible Siberian ancestry shared between most of the Uralic-speaking populations, suggesting a migratory contribution to the dispersal of the languages. This component is part of a broader eastern influence on the genepool of modern northern Europe and was probably not limited to the spread of extant Uralic languages.