

## Session 2 (October 9<sup>th</sup>, 2010)

### Biologic evolution and Human Paleobiology

Table 2.1: Taxonomy and phylogeny of the Eurasian peopling

## Early Population Admixture in Xinjiang revealed by the ancient mitochondrial DNA

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Central Asia is where population admixture takes place between eastern and western Eurasia [1]. However, little is known about the initial contact of the East and the West and the mechanism of the latter admixture. Ancient DNA plays an essential role in illustrating the migration events in history. In the past several decades, plentiful data of mitochondrial DNA (mtDNA) of ancient inhabitants in Xinjiang province in northwestern China have been published. The mtDNAs in Xinjiang included both eastern haplogroups (such as haplogroups A, B, D, and M) and western haplogroups (such as haplogroups H, J, K, and U). Moreover, genetic admixture has been observed as early as about 3800 years ago [2]. Interestingly, although ancient people carried more European craniofacial features, ancient mtDNA supports that eastern components are more dominant. Besides, we also examined more ancient mtDNA data of populations in the surrounding areas, and found that in Central Asia, the genetic components of the East decreased from the east to west, whereas the western component increased. The present analysis suggests that initial admixture of the eastern and western Eurasians might have happened 3800 years ago in most areas of Xinjiang province, the ancient people (about 2000 years ago) carried more eastern genetic components [3].

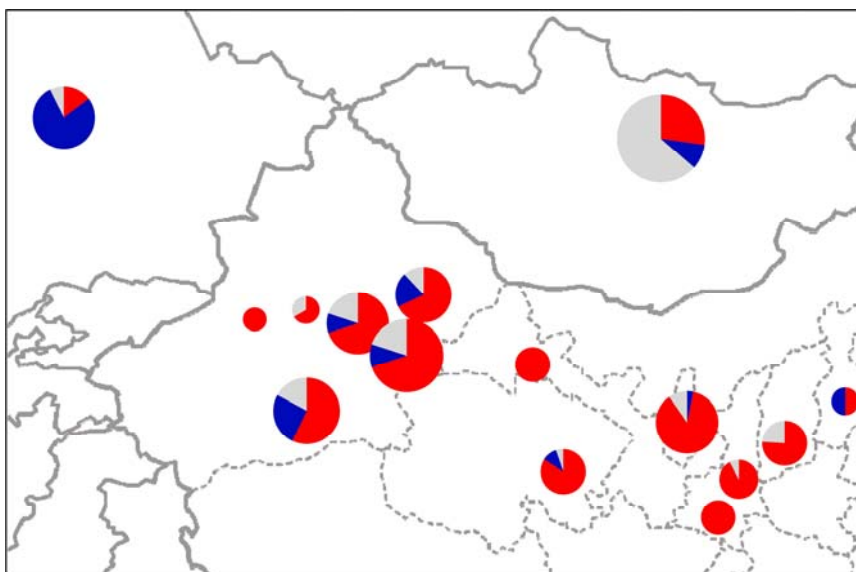


Figure 1. The eastern (red) and western (blue) genetic components in the populations in and around ancient Xinjiang. Gray part is unclear components. 图 1 新疆及周边地区古代群体中的东方成分（红色）和西方成分（蓝色）。灰色为无法确定的成分。

## 新疆古代人群线粒体 DNA 研究支持欧亚人群早期交流

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众所周知, 欧洲人群和亚洲人群在中亚交流形成混合人群, 如哈萨克斯坦、新疆等国家和地区的人群[1]。然而, 欧亚交流何时发生, 两个人群发生了怎样的交流等问题目前尚未解决。古 DNA 研究是阐明历史上人群迁徙和交流的有效手段。过去的几十年里产生了大量的古 DNA 研究结果, 其中包括中国新疆古代居民的古 DNA 研究。历史上, 新疆有大量的欧亚人群交流, 产生特殊的新疆人群。现代人群的 DNA 数据揭示, 新疆人群是欧亚混合人群。古 DNA 研究也证明在很早以前 (大约 3800 年前), 新疆的人群就是混合人群[2]。目前新疆约 2000 年前古代人群研究揭示这些人群的线粒体 DNA 包含东亚单倍群, 如单倍型 A, B, D, M 等; 也包含欧洲单倍群, 如单倍型 H, J, K, U 等。有趣的是, 虽然现代和古代的新疆人群的面貌特征都更接近欧洲人, 但 DNA 揭示这些古代人群的东亚遗传成分更多。此外, 结合新疆周边的数据, 我们可以发现, 中亚不同遗址的古代人群, 东亚成分自东向西逐渐减少; 相应的, 欧洲成分逐渐增多。综上所述, 从混合时间上看, 早在 3800 年前在新疆已经发生了欧亚人群的混合; 从人群的遗传结构上看, 大多数现有的 2000 年前的新疆古代人群中东亚遗传成分多于欧洲成分[3]。

### References:

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