New Evidence about Chicken Domestication in Northern China

Chicken domestication is an interesting topic which has attracted the attention of many archaeologists and animal geneticists. Northern China is recognized as an agricultural homeland in East Asia, and some archaeological evidences have implied the possibilities of chicken domestication in ancient Northern China.

In 2014, a research paper based on ancient mitochondrial DNA (mtDNA) entitled "*Early Holocene chicken domestication in northern China*" shed new insights into the puzzle of chicken domestication. But it also raised controversies including the identification of "chicken remains", the historical distribution of red jungle fowls, and the data quality of the mtDNA sequences.

More intriguingly, no genetic evidence from extant chickens corroborates the Northern China domestication hypothesis. This begs for answers as to whether dispersal, admixture, or anthropogenic replacements could completely blur the ancient footprints.

To address this issue, researchers from the Kunming Institute of Zoology under the Chinese Academy of Sciences, Jiaying University, South China Agricultural University and Yunnan Agricultural University and so on jointly conducted a study about mtDNA variations in chicken populations.

The initial analyses revealed that mtDNA sub-haplogroup C1 showed characteristics that constitute a genetic signal of chicken domestication in northern China. The evidence from genetic diversity and archaeology indicated a recent expansion of sub-haplogroup C1 in Yellow-Huai River Basin of Northern China around 2.5 kya. This pattern was replicated in haplogroup A.

Taking all the findings together, researchers proposed that the dispersal of sub-haplogroup C1 and haplogroup A pointed to a recent demographic event, which is probably related to game fowl rather than early domestication of chicken. The analyses did not support the scenario of early Holocene chicken domestication in Northern China.

Their study has been published online in *Science Bulletin*.