

The Neolithic transition in central Europe was accompanied by genetic exchanges between European hunters and Near Eastern farmers

Agriculture in Europe has Near Eastern roots. It was carried by migrants from Anatolia (what is now Turkey), first to the Balkans, and from there to Central Europe, 7.5 thousand years ago. With the arrival of the incoming farmers, local hunter-gatherers living in Europe at the time had to make room. We know very little about the relationship between the two groups during the initial stages of the contact, due, in part, to the scarcity of archaeological and biological remains from that time. Excavations at Brunn am Gebirge-Wolfholz archaeological complex near Vienna, Austria, belonging to the Linearbandkermik (LBK) culture, yielded a treasure-trove of material culture artefacts along with four burials within the complex' earliest portion, Brunn 2, likely a ritual center of one of the earliest agrarian communities in Europe.

An article published in Scientific Reports on December 20th details the analysis of genetic ancestry as well as diet and mobility of the individuals interred at Brunn 2, conducted by an interdisciplinary team of researchers from the USA, Austria and Ukraine. It turned out that the genetic ancestry of one of the Brunn 2 individuals was a near-even split between Anatolian farmers and central European hunter gatherers. His paternal genetic lineage was consistent with the Near Eastern origin, while his maternal lineage was characteristic of the hunter-gatherers of Europe. Such an ancestry profile makes this individual a potential first-generation descendant of a hunter-gatherer mother and a farmer father, and presents some of the earliest evidence of interbreeding between local hunter gatherers and incoming farmers. Based on the analysis of stable isotopes indicative of mobility, it was also found that this hunter / farmer was not born around Brunn am Gebirge. Perhaps he came from an area near Lake Balaton in western Hungary, where a particular kind of local stone, radiolarite, was mined for making arrowheads. Large quantities of radiolarite were found at Brunn 2, suggesting a local production center. The first-generation hunter / farmer interred at Brunn 2 was buried with six radiolarite trapezes, suggesting his community role might have been that of a stone craftsman. It is tempting to imagine that the stone processing skills, likely learned from his hunter/gatherer brethren, earned him a burial spot at a ritual center of a farming community, thus symbolically uniting the skills and the genetic ancestry of the two groups at the dawn of the European agricultural revolution.

The article (Open Access) can be accessed using the following link:

www.nature.com/articles/s41598-019-56029-2

Photo credit: LBK Pottery from the Brunn 2 site, photo by Peter Stadler, 2009.