**In Search for Ancestors of the People Who Brought Indo-European Languages to Europe**

Five thousand years ago, the egalitarian world of late Stone Age Europe was upended by a wave of cattle-herding, horse-riding strangers from the vast spans of arid eastern grasslands (steppes). These newcomers brought with them new languages belonging to the Indo-European language group, new pastoralist-based economy, social inequality, and a different genetic ancestry. Archaeologists call these horse riders the Yamna culture. The details of their origins remain poorly understood. A recent paper by a GVSU Professor Alexey Nikitin, with co-authors from Harvard University, University of Missouri, and Grinchenko University of Kyiv, Ukraine, attempts to shine some light on the mystery of the origins of the Yamna people.

In 2007, a human bone fragment was discovered at the Kolomiytsiv Yar Tract (KYT) archaeological site in the vicinity of Kyiv, Ukraine. The site was a settlement of a late Neolithic agrarian culture known as Trypillia. The discovery of Trypillian human remains is exceedingly rare, so the team welcomed the opportunity to analyze the find to learn more about Trypillian ancestry and lifeways. To their surprise, when the researcher obtained the ratios of stable isotopes of carbon and nitrogen, which are indicative of dietary preferences, the values did not look like those that are typical to agrarian groups such as Trypillia. Instead, the isotopes were similar to those of the steppe nomads of the North Black Sea region. When the team analyzed the DNA extracted from the ancient bone, they found that the individual, a female, was not of Trypillian genetic ancestry, but belonged to a group descended from hunter-gatherers of the East European Plain and the Caucasus. This ancestry profile characterizes people of the Yamna culture, except that the KYT female lived about 700 years before the appearance of the Yamna in the archaeological record. This meant that the KYT individual was in the ancestral line that led to the development of the Yamna genetic ancestry. While it is difficult to identify the culture the KYT belonged to, a similar genetic profile was also identified in a contemporaneous to the KYT female individual from the Deriivka II site in Ukraine that belongs to the Cooper-Age Serednii Stih culture of steppe nomads, featured in another article co-authored by Professor Nikitin, recently accepted by *Communications Biology*, a Nature Portfolio journal.

Ukrainian archaeologists have long considered Serednii Stih to be ancestral to the Yamna. The research by Professor Nikitin provides evidence obtained by methods used by natural sciences to support a theory conceptualized by archaeologists.

The paper by Nikitin et al. detailing the molecular analysis of the KYT bone sample, titled “Interactions between Trypillian farmers and North Pontic forager-pastoralists in Eneolithic central Ukraine” was published in *PlosOne* on May 22, 2023 (10.1371/journal.pone.0285449). A preprint of the accepted manuscript detailing the genetic ancestry of a Serednii Stih individual from Deriivka II, titled “Genetic continuity, isolation and gene flow in Stone Age Eastern Europe” is available on Research Square, <https://doi.org/10.21203/rs.3.rs-1966812/v1>