



The Corded Ware culture in the Eastern Baltic: New evidence on chronology, diet, beaker, bone and flint tool function

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ABSTRACT

Around 2900–2300 cal BCE, mobile stockbreeders introduced the Neolithic Corded Ware culture (CWC) into the Eastern Baltic. Here, a Central or Northern European Neolithic economy and ideology took hold despite differences in burial practices. Although around 90 CWC graves are known in the region their contents have not been intensively studied. Here, we present new AMS radiocarbon (^{14}C) measurements and carbon and nitrogen stable isotope data obtained on human bone collagen, molecular and isotopic data obtained from ceramic beakers, and user-wear data of flint and bone tools from several CWC graves, Benaičiai, Biržai, Krasnasielski, Dakudava 5, and Drazdy 12, in Lithuania and Western Belarus. The bone collagen $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ stable isotope data are rather homogenous and demonstrate that the majority of consumed protein was derived from terrestrial resources. Organic residue analysis of two CWC beakers yielded lipids consistent with ruminant carcass and dairy fats, whilst use-wear analyses indicates that bone pins, flint blades and axes were used as grinders, functional tools or had been carefully renewed before deposition respectively.

1. Introduction

The peoples of the Corded Ware culture (hereafter CWC) are traditionally regarded as mobile stockbreeders who brought animal husbandry into the Eastern Baltic between ca. 2900–2300 cal BCE. The presence of domesticated faunal remains within CWC contexts as well as stable isotope data obtained on human bone collagen has demonstrated that terrestrial derived protein was preferentially consumed when compared with the preceding Subneolithic hunter-gatherers who relied heavily on aquatic resources (Lõugas et al., 2007; Piličiauskas et al., 2017b, 2017d). Throughout Europe the CWC appears abruptly and differs to all preceding cultures in terms of material culture. Thus, nearly 100 years ago it was postulated that the CWC was brought into Europe by a mass migration of pastoralists from the Pontic steppe

(Childe, 1926; Gimbutas, 1979); a hypothesis that has been critiqued numerous times (e.g. Lang, 1998; Furholt, 2014; Beckerman, 2015) until recently proved by genetic analyses (Allentoft et al., 2015; Haak et al., 2015; Saag et al., 2017; Mittnik et al., 2018).

This contribution focuses on several CWC graves in the Eastern Baltic. Whilst CWC human remains are highly sought-after for AMS radiocarbon (^{14}C) dating, stable isotopic and genetic analyses, less than a third are available for scientific analysis. Moreover, human remains are, in general, poorly preserved. This has largely been attributed to the acidic soils in the region, which have affected the organic component of the bones, but also unsolicited excavations and the mishandling of materials in storage (Žukauskaitė, 2004).

In 2017, one of us (GP) was fortunate to discover and excavate a new CWC inhumation at the site of Benaičiai in North West Lithuania. It

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Fig. 1. Map showing the sites investigated in this study as well as known CWC graves in the Eastern Baltic (data from Lōugas et al., 2007, Grasis, 2007, Žukauskaitė, 2004 and Asheichyk and Vaitovich, 2016 with some additions and modifications).

was during these investigations when we realised Belarusian CWC burials are also poorly understood. A grave found inside the flint mine at Krasnasielski is one such example. Although the remains were well preserved it has not been directly AMS radiocarbon (^{14}C) dated. In order to rectify this imbalance, reconstruct the diets of these two individuals and place them into the wider context, here, we present new osteological, radiocarbon and stable isotope data from the two skeletons.

To supplement the aforementioned dietary reconstruction we undertook organic residue analysis of two CWC beakers. Prior to this study it was unknown why beakers were placed within inhumations and what their function was. Unfortunately pottery was absent at Benaičiai as well as other Lithuanian CWC graves, whilst a beaker found at Krasnasielski was not available for analysis. To overcome this, beakers were sampled from two Belarusian CWC burial-bearing sites, Dakudava 5 and Drazdy 12 located in the Upper Neman (Lakiza, 2008; Asheichyk and Vaitovich, 2016).

Lastly, we present the use-wear results obtained on a flint ‘knife’

recovered from the Benaičiai burial. Moreover, a flint blade and axe as well as a bone ‘pin’ recovered from another CWC grave in Lithuania, Biržai, were analysed. Since use-wear analyses have not been previously undertaken on CWC grave goods, it is currently unknown whether they were intentionally commissioned for interment with the deceased as has been demonstrated elsewhere in Europe (e.g. Little et al., 2017) or held a utilitarian function prior to deposition.

To summarise, we present and discuss: (1) osteological analyses alongside radiocarbon measurements, and $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ stable isotope data obtained on human bone collagen from two CWC graves located in Lithuania and Belarus; (2) organic residue analyses undertaken on ceramic beakers from two CWC burials located in Western Belarus; and (3) use-wear data obtained on several flint and bone tools from two Lithuanian CWC inhumations. We hope that our findings will provide a more comprehensive and reasoned insight into the lifeway’s of the CWC peoples in the Eastern Baltic.

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