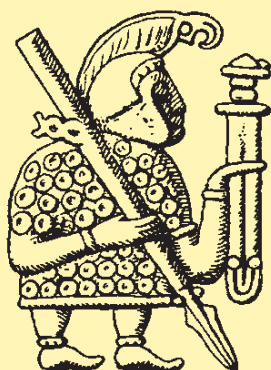


# .. FORN VÄNNEN

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# Korta meddelanden

## Two male individuals with modified teeth from Gnezdovo, Russia

Dental modification in form of single horizontal furrows that were filed on the frontal upper part of the tooth crown of one or several incisors and sporadically even canines of the upper and in single cases also the lower jaw are known from Viking age Scandinavia since few decades (see Arcini 2005; Kjellström 2014; Toplak 2016, pp. 191–194; Ahlström Arcini 2018; Radon 2019 for a current overview). More than 80% of the currently known ca. 130 cases comes from the Swedish island of Gotland, mostly from the grave fields of Kopparsvik near Visby and Slite torg, Othem parish (Toplak 2016, pp. 102–105, 235–238) and several individuals are known from the Swedish mainland, Öland, Fyn in Denmark, and a single one from the famous mass grave at Ridgeway Hill near Weymouth, Britain (see Radon 2019, pp. 8–12). However, isotope analysis on several individuals with filed teeth proved that most of these men were of Gotlandic provenance which suggests that Gotland can be regarded as the origin for the custom of Viking age dental modification (Ahlström Arcini 2018, p. 80).

During a research stay at the Institute and Museum of Anthropology, Moscow State University, for one of the author's PhD-thesis (Palmowski in prep.) in spring 2020, two more cases of deliberately modified teeth were observed.

The recent identification of deliberate dental modification on two skulls from Gnezdovo in Russia is the first known evidence for this custom beyond the Baltic. The archaeological complex of Gnezdovo is one of the most important sites for the early medieval period and vital for the emergence of Old Rus' and the understanding of contacts between Eastern Europe and Scandinavia from the 9<sup>th</sup>–11<sup>th</sup> centuries. It must be regarded as a proto-urban fortified centre with important socio-political, administra-

tive and economical functions, as documented by evidence for the presence of a poly-ethnic population and local elites, craft production and far-distant trade, especially on the trading routes between Scandinavia and Northwestern Russia to Byzantium (Murasheva & Pushkina 2002, p. 329; Pushkina et al. 2017, pp. 278–281). The complex of Gnezdovo lies 13 kilometres west of present-day Smolensk, at the confluence of the rivers Dnieper, Svinets and Olša and consists of several large cemeteries, a citadel and a number of rural settlement which occupy an area comparable in size to Birka in Sweden (Pushkina et al. 2017, pp. 251–252). Since the late 19<sup>th</sup> century around 1,300 of the approximately 4,000–5,000 burial mounds have been excavated (Pushkina et al. 2017, pp. 252–253), mostly containing cremation burials (Avdusin & Pushkina 1988, p. 20). A number of burials indicate the presence of a larger group of individuals originating in Scandinavia, e. g. in form of boat burials or through dress accessories, jewelry or other find material (Pushkina et al. 2017, pp. 255–256, 263–265, 280).

Both examined skulls stem from inhumation burials under smaller mounds in the central and largest cemetery of Gnezdovo. The first grave – mound C-140 was excavated in 1975 by an expedition of the Moscow State University. It was almost circular with 4,6–4,7 m in diameter and a preserved height of 0,4 m. A burial pit, measuring 1,85 x 0,7 m and a depth of 1,0 m, oriented NW–SE, was revealed under the mound. The individual (hereafter referred to as individual 1) was buried in an extended position on its back with its head to NW. Especially noticeable was a large stone of 43 x 25 cm that was placed on the individuals left thigh and hips. An *in situ* examination of the post cranial skeleton detected a healed fracture of the distal femur diaphysis,



Fig. 1. Skull of the male individual 1 (grave C-140) with horizontal furrows or deep, crescent-shaped grooves on all four upper incisors. Photo: Valerie Elena Palmowski, 2020.

possibly effected by a weapon. Finds were completely absent. Due to its location, the burial can be dated to the turn of the 10<sup>th</sup>–11<sup>th</sup> centuries. The second grave – mound C-222 – was excavated by an expedition of the Moscow State University in 1977. The mound was slightly elongated, measuring 4,5 m on the north-south axis and 4,0 m on the east-west axis with a preserved height of 0,6 m. The burial pit under the mound was slightly shifted in relation to the mound and orientated NW-SE, measuring 2,22 x 0,88 with a depth of 0,63 m. The individual (hereafter referred to as individual 2) was also buried in an extended position on its back with the head

to NW. Traces of wood under and around the skeleton indicate that grave C-222 was one of very few burials at Gnezdovo with a wooden coffin. Most inhumations at Gnezdovo were burials in simple pits (ca. 70%) or in wooden chambers (ca. 29%), burials in coffins were rare (Pushkina et al. 2017, p. 255). Near the left *tibia* of the individual, an axe of type III according to Kirpichnikov (1986, p. 90) and an iron knife were found, a bronze belt buckle was lying at the pelvis and fragments of a stone arrow were found in the area of the chest. Weapon burials with swords, shields, spears or axes were also very rare at Gnezdovo, even though arrow heads occurred

in several graves (Pushkina et al. 2017, p. 255). As a weapon burial in a coffin, the grave in mound C-222 exhibits two rare features.

During the research stay only the skulls of the individuals were available and macroscopically examined by Palmowski. The skeletal material of individual 1 showed good preservation, except a fragmented and missing left *Ramus mandibulae*. Due to taphonomy the bone surfaces have taken on a rich, dark brown colour, which, among other causes, can be ascribed to high humic soil contents with high organic acid components, or the presence of tannins and iron oxides (Bradfield 2018, p. 501). The skull and mandible of individual 2 had been partially reconstructed with an unknown substance. A light colour and damaged bone surfaces indicate different soil conditions in Mound C-222 compared to Mound C-140. Using various morphological traits of the skull (selection of traits as suggested by Steckel et al. 2005, pp. 9–11) both individuals are regarded as male. According to endo- and ectocranial suture closure (as suggested by Grupe et al. 2015, p. 277) and the wear pattern of the molars (Brothwell 1981, p. 72), individual 1 died between 25 and 35 years. Individual 2 died between 40 and 50 years, reconfirming the hypothesis that field teeth are a phenomenon limited to adult men.



Fig. 2. Skull of the male individual 2 (grave C-222) with filings on the upper left incisor and the upper left canine. Photo: Valerie Elena Palmowski, 2020.

Little information on pathological changes could be collected. Individual 1 displayed several severe cases of dental calculus. Considering the relatively young age at death and the preliminary results of the dental pathology recording, which indicate an overall low intensity as well as frequency for dental calculus in the central burial group (Palmowski in prep.), this is a noteworthy find. It remains a task for future analyses to examine whether an exceptional dietary pattern or a genetic disposition – presumably associated with a foreign origin – could be the cause. The saliva composition has a significant impact on the formation of dental calculus. Hereditary traits can facilitate the occurrence of dental calculus, but also caries and other enamel defects (Alt et al. 1998; Hennings 2019). Alternative explanations can be found in unfavourable soil conditions for the preservation of dental calculus in this area or in a poor oral hygiene, which also plays a central role in the prevention of diseases. The endocranial granulation pits on either side of the sagittal suture of individual 2 were rated as average and received no further attention.

An initial macroscopic examination of the teeth modifications revealed significant differences between the two individuals. All four upper incisors of individual 1 were modified with either horizontal furrows or deep, crescent-shaped grooves (fig. 1), while only the upper left first incisor and the upper left canine of individual 2 displayed clear evidence of filing. In the second case a combination of horizontal furrows and a crescent-shaped groove (incisor 1) as well as a singular horizontal furrow (canine) had been applied (fig. 2). According to Ahlström Arcini (2018, p. 77) the exact parallel alignment of several lines on the same tooth as well as the finding of dental calculus on top of the filings in some documented cases from Sweden do not suggest more than one filing event. In the two cases from Gnezdovo, microscopical analyses should investigate the matter further.

Thus far no correspondence between the number or type of filings and age, stature or grave goods has been detected (Ahlström Arcini 2018, p. 77). On the contrary, it seems to be a phenomenon present among adult males of all archaeologically verifiable strata of life.

A prevalence in Eastern Sweden makes an origin of the custom in this geographical region plausible, most likely on Gotland. Stable isotope analyses will help to detect if this also might be the case for individual 1 and 2 from Gnezdovo. Additionally, more modified teeth cases are expected to be found in the future, constantly renewing researcher's perspectives. Since there are only the two described cases (current state of research), the question arises, if individual 1 and 2 had more in common than the teeth modifications. Were they representing a specific group of people in Gnezdovo, or is their appearance in the skeletal sample simply to be attributed to the site's huge network, encompassing places as far away as Scandinavia?

The symbolism of Viking age dental modification has been discussed intensively within the last years and several interpretations have been brought forward, e. g. as a sign of a warrior elite or as a marker of unfreedom (Toplak 2016, pp. 325–328). While both interpretations may be applicable in individual instances, they cannot be regarded as generally valid explanation for the phenomenon of dental modifications. Less than 7% of all currently known individuals with filed teeth were buried with weapons (Ahlström Arcini 2018, pp. 77–78; Radon 2019, p. 22). Furthermore, very few men – none of them buried with weapons – showed traces of (healed or lethal) weapon-inflicted traumata on the skeletal remains, indicating the participation in armed conflicts (Ahlström Arcini 2018, pp. 77–78). In addition, the filings would have been scarcely visible beneath upper lips and moustache, even if they had been coloured with some kind of black paste (Arcini 2005, p. 732). At the present stage of research, the only compelling conclusion is to regard the custom of teeth filing as intentionally performed display of a certain identity and thus as a marker for mutual identification within a limited group of people. Even though it can only be speculated about the true nature of this social group, the concentration of dental modification at early trading places in Viking age Scandinavia reveals a striking pattern. Thus, it appears convincing to interpret the custom of teeth filing as a rite of initiation and sign of identification for a closed group of merchants, similar to the later

guilds. Following this assumption, members of this closed group of merchants could identify themselves through the teeth filings and thus received commercial advantages, protection or other privileges which were relevant to the development of the concept of trading guilds in high medieval times (Toplak 2016, pp. 328–331).

The observation of dental modifications on the teeth of two male individuals buried at Gnezdovo is the first evidence of the Scandinavian custom in this region. In addition to the material evidence of an extensive trade network in the 10<sup>th</sup> and 11<sup>th</sup> centuries, it was now possible to prove either individual mobility or the adoption of a very specific means of communication, in the form of dental modifications. It remains a task for future research to answer further questions about the two individuals, their interests in Gnezdovo and the possible identification mark the bore. Investigations such as isotope analysis and Electron Microscope Scanning of the teeth to identify certain characteristics of the dental modifications promise valuable new perspectives on the origin and mobility of these individuals and the site itself.

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