

# Not gone with the fire

## Charred cereal food remains from Lusatian Culture (Lausitzer Kultur) burials at Niederkaina (Lkr. Bautzen, Saxony) (1400-500 calBC)

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The Niederkaina Schafberg near Bautzen (Fig. 1) consists of more than 2000 graves dating from Neolithic to Iron Age and is therefore one of the biggest burial grounds in central Europe. During excavations in the years 1948-1971 conducted by the Landesmuseum für Vorgeschichte (now Landesamt für Archäologie) several thousands of fragments of charred food remains were recovered in graves of the Lusatian Culture, which connects the Urnfield Culture respectively Hallstatt Culture in the south with the Nordic Bronze/Iron Age. Most findings were found in graves belonging to the younger phase of the Lusatian Culture, the Iron Age Billendorfer Culture in the southern part of the cemetery (Fig. 2). Some were still in pottery vessels, others were scattered between sherds in the graves (Fig. 3). The aim of the macrobotanical investigations combined with scanning electron microscopy (SEM) was to find out, what ingredients were used, if the food remains were edible and if they give us information about the Iron Age society. The palaeobotanical analysis revealed a variety of foods made of processed cereals.

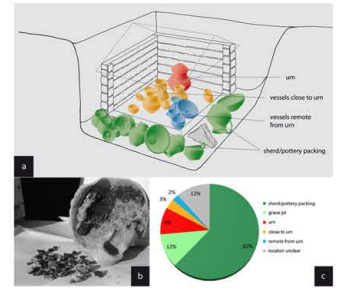
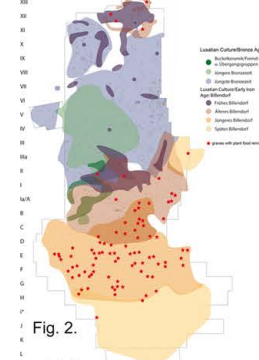
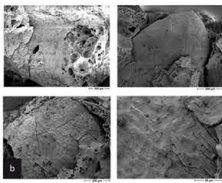


Fig. 3. a Billendorfer chamber grave, reconstruction. b Cup with broomcorn millet gruel. c Position of plant foods in the graves.

### Buns

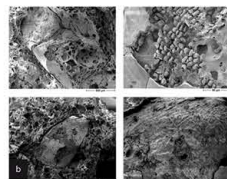
Frequently found is leavened (small buns) and unleavened bread (flat bread) made mostly from emmer wheat (*Triticum dicoccon*). The charring took place in pottery during cremation on the funeral pyre and results not only in a very good carbonized material, but also parts of the remains are preserved dried out.



a Almost complete leavened bun. Scale 1 cm.  
b SEM pictures surface bun.  
c left *Triticum dicoccon*. Scale 1 mm.  
right dried out caryopsis, testa.

### Noodles

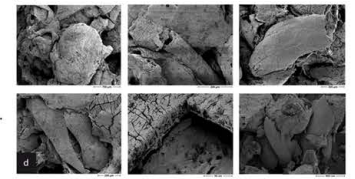
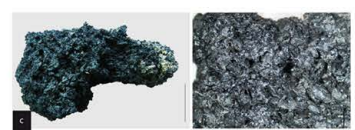
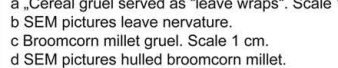
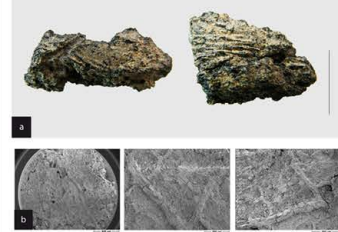
Emmer wheat was also detected as main ingredient of elongated, cylindrical objects, we called „noodles“. Cooking experiments showed, that these noodles were most probably rolled between the palms of hands and directly been cooked in boiling water.



a „Noodles“. Scale 1 cm.  
b SEM pictures surface noodles.  
c Experimental noodle cooking.

### Gruel

Different kinds of cereal gruel was found. On the one hand emmer gruel was prepared and wrapped up in leaves for consumption.



a „Cereal gruel served as „leave wraps“. Scale 1 cm.  
b SEM pictures leaf nervation.  
c Broomcorn millet gruel. Scale 1 cm.  
d SEM pictures hulled broomcorn millet.

On the other hand broomcorn millet (*Panicum miliaceum*) gruel, mostly made from still hulled grains, was also very common in the graves.

### Poppy

Opium poppy (*Papaver somniferum*) was used as a flavour in cereal products and could have also been an important plant in the mortuary practices, which is also demonstrated by rattles in the shape of poppy capsules.

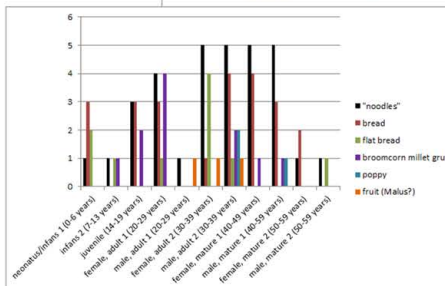
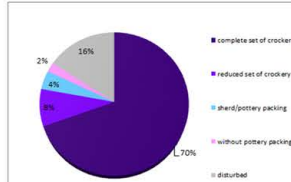


a SEM pictures poppy seeds and poppy seed baked into cereal food remain.  
b Rattles in the shape of poppy capsules.

### A menu for the dead?

The burial consisted of the cremation and the following deposition of the remains of the burial pyre including a set of crockery, human and animal bones, charcoals and plant food remains. Statistical analysis revealed a relationship between richly equipped graves and the variety of food remains.

Besides it seems that the biggest variety of food appears in graves of adult men and women. Poppy was only found in male burials.



### Still hungry?

As the flour used for bread, noodles and gruel has a good quality and contained neither weeds nor chaff remains, cereal processing was intensive and included threshing, deshushing, winnowing and sieving.

The high quality of the cereal products found at Niederkaina showed that these food offerings most probably correspond with daily food, even if we don't know how they looked like.

The investigations gave us insight in an elaborated food preparation of a variety of foods during the Lausitzer Kultur including cooking, baking, the addition of leaven or ingredients like opium poppy to improve the flavour, as well as the modelling of different shaped cereal food (different kinds of bread, buns, „noodles“, stuffed leaves). Even if we must assume that most of the food burnt on the burial pyre, social differences within the material have been detected. Adult men and women, efficient members of society, were equipped with rich sets of crockery as well with a broad variety of food.

Literature:  
Herbig C, Kaiser J, Manschus G 2016, Dem Feuer getrotzt: Nudeln, Brot und Hirsebrei. Archäobotanische und archäologische Untersuchungen zu den pflanzlichen Speisen vom vorgeschichtlichen Gräberfeld Niederkaina. Ausgrabungen in Sachsen 5. Arbeits- und Forschungsberichte zur sächsischen Bodendenkmalpflege. Beiheft 31, 519-532.

Figures  
Fig. 1-3, rattle and diagrams LfA Saxony.  
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