Imprints in pottery and daub from Site 3-6 at Ruda near Grudziądz, N Poland as a source of information about plant use in the Late Bronze Age and the Early Iron Age

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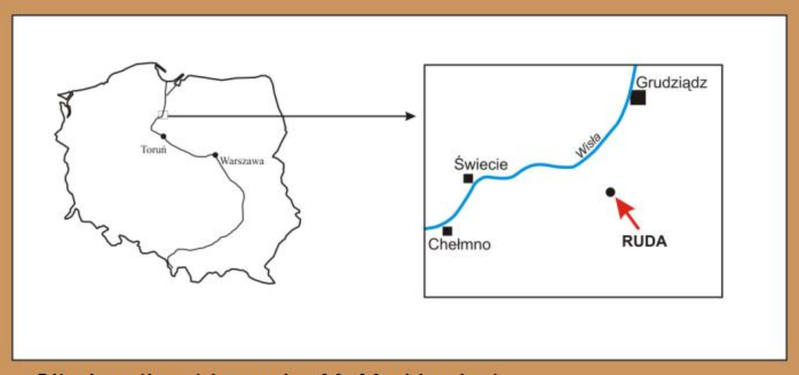
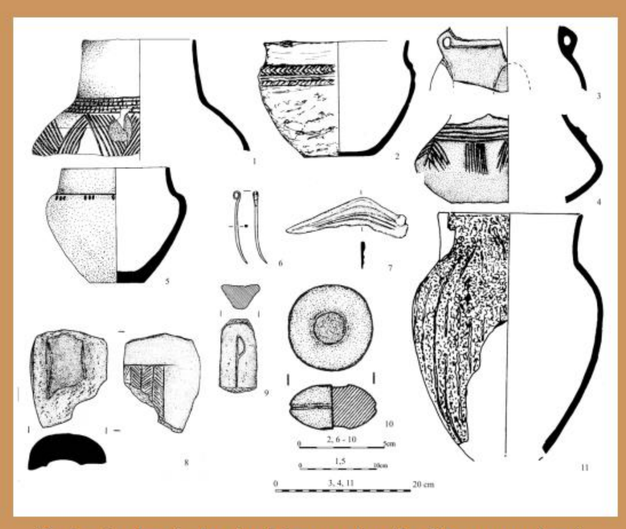


Site location (drawn by M. Markiewicz)



Selected artefacts (drawn by A. Sosnowska)

The site at Ruda was excavated in 2000-2002 by the Scientific Team for Motorway Research based at the Institute of Archaeology University Nicolas Copernic in Toruń. Traces of a Lusatian Culture settlement (ca. 1000–683 BC) were discovered over an area of ca. 10 ha on a flat hill located close to the River Vistula.

Site 3-6 at Ruda, Grudziądz district is situated in southern part of Grudziądz Basin. On the site some evidence of settlement which had existed there in the later Bronze Age and the early Iron Age was found. The discovered site of the Lusatian Culture included remains of homesteads composed of dwellings of different purpose as well as pits of various functions, hearths and pottery furnaces. Archaeological material from the site is represented by abundant set of pottery fragments, jewellery and outiles of bronze (for example sickles) and for the first time (in this period) found metallurgical clay casting moulds in Chelmno Land. Some stone tools (for example hand-mill) were also found.

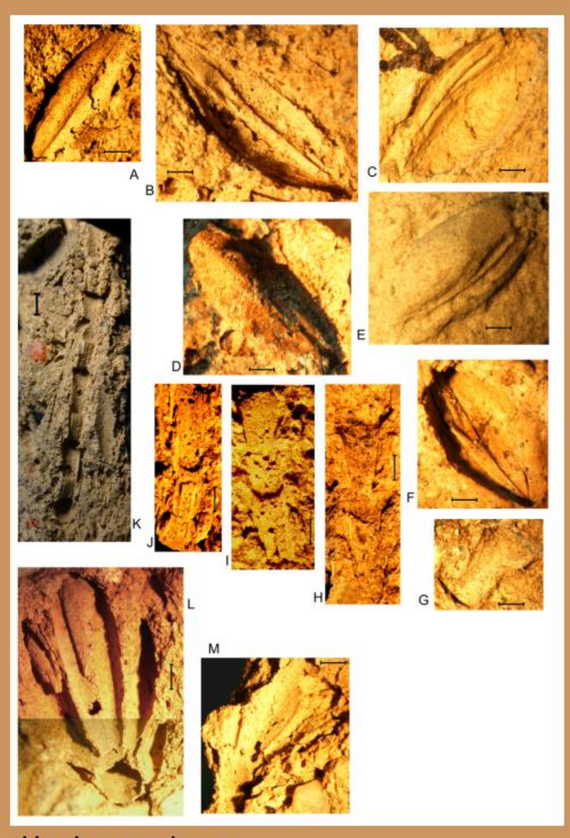
Numerous and diverse remains of collected plants, cereals, weeds and carbonised oddments of various timber species have been discovered in number of pits. Fragments of wild and domestic animal bones (including birds, turtles and fishes) and mollusc shells are also known from the site. In some pits burnt clay being the rest of pottery furnace constructions was found.

In the late Bronze Age climate was warm subboreal. The Lusatian settlement was located at the foot of the brink of the Vistula Valley, on the flat headland, sloping towards the river, on the madas and peat-bogs. The flood's plain could be grown with *Alnus* sp, *Carex* sp. and *Gramineae*. The slope of the Vistula Valley was covered by forests with *Quercus* sp., *Pinus sylvestris, Populus* sp., *Carpinus betulus*, *Fraxinus excelsior* and *Ulmus*.

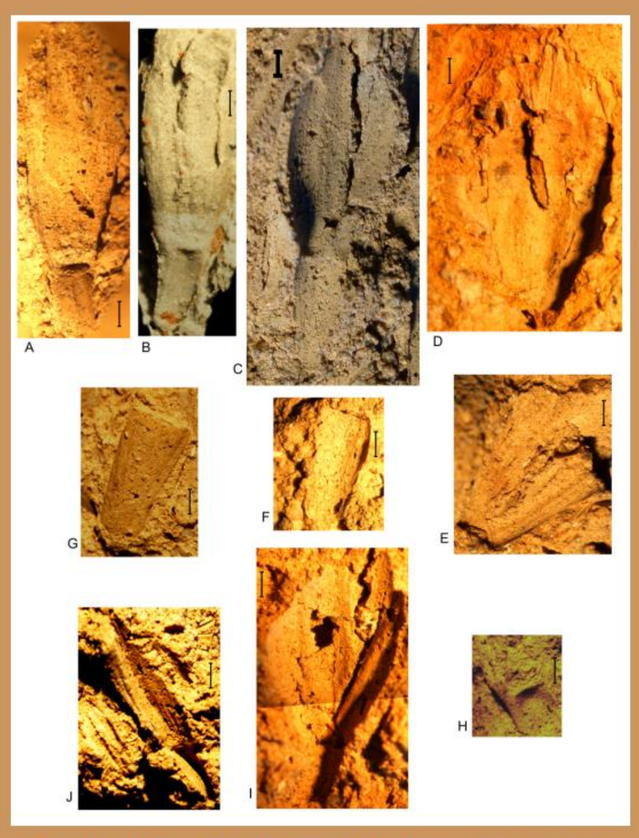
Since the Early Iron Age frequent evidences of deforestation and erosion of soils followed by the extension of the open terrains took place. In the beginning of Subatlantic period strong humidity, cooling of the climate and raise of groundwater level resulted in changes of social and economical structures of the Lusatian society in Ruda.

Pottery furnace constructions , Feature 13 E (phot. M. Dziób)

Furnace constructions , Feature 66 H (phot. M. Dziób)



Hordeum vulgare – grains, rahis internodes and triplets



Wheats, A-E – *Triticum spelta*; J-H – *Triticum* sp.

Archaeobotanical studies of imprints in daub and pottery as well as charred remains associated with the daub showed dominant role of hulled barley (*Hordeum vulgare*) and wheats (*Triticum*) as the main cereals of Ruda settlers. It seems that spelt (*Triticum spelta*) was more frequently used than other wheats.

Gold of pleasure (*Camelina* sp.) was also important plant at the studied site. That oil plant appeared in Poland in archaeobotanical materials at Zeławice – Dłubnia site dated to the Bronze Age (Gluza 1991, unpubl). The beginning of cultivation of *Camelina* is uncertain as that secondary crop appeared firstly as a weed, mainly of flax fields.

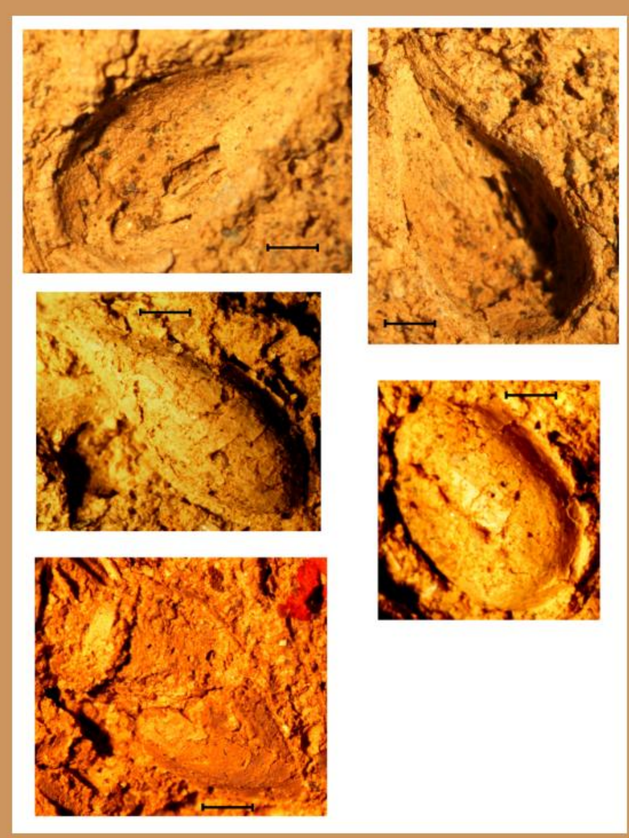
Chaff remains are the dominant type of material among them cereal awns are very common. We have also found a few remains of wild plants.

Taxa	type	number
Triticum sp.	c	51
Cerealia indet.	c	29
Hordeum vulgare (hulled)	c	22
Poaceae indet.	c	7
Chenopodium typ *album*	s	4
Avena sp. & cf.	c	3
cf. *Chenopodium* sp.	s	2
Triticum spelta	g	1
Triticum cf. *monococcum*	c	1
Fallopia sp.	s	1
Polygonum sp.	s	1
Trifolium sp.	s	1
cf. Brassicaceae indet.	s	1

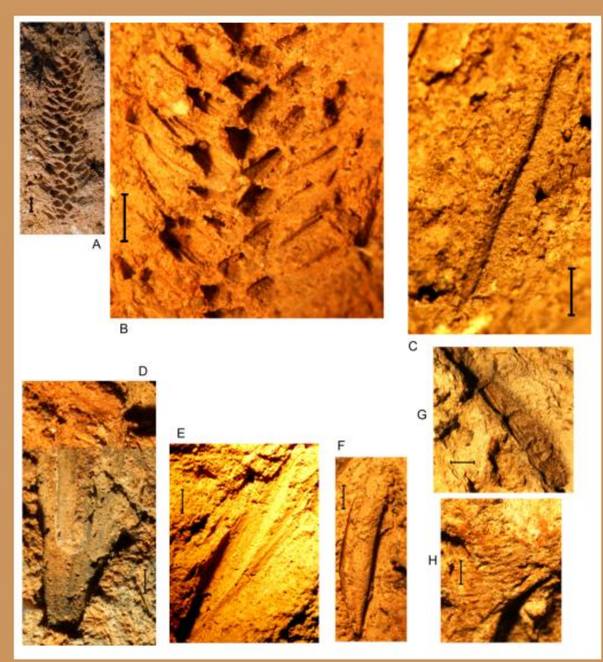
Charred remains from feature 13

Taxa	type	number
Hordeum vulgare & cf.	c	60
Hordeum vulgare	r	57
Triticum spelta & cf.	chaff	44
cf. *Triticum* sp.	chaff	38
Camelina sp. & cf.	capsules	28
Cerealia indet.	c	14
Triticum cf. *dicoccon*	sp	12
cf. *Bromus*	c	6
Triticum sp.& cf.	c	4
Triticum/Elymus	sp	4
cf. *Avena* sp.	c/g	4
Equisetum sp.		1
cf. *Lycopodium* sp.		1
Cerealia/Poaceae	chaff	numerous

Imprints in daub from feature 66



Capsules of *Camelina* cf. *sativa*



A, B – cf. *Lycopodium*?; C – *Equisetum* sp.; D-F – Poaceae indet.; G – indet.; H - fingerprints

All pictures of imprints done by Aldona Bieniek and Katarzyna Cywa, scale bar equals 1 mm