Unscrambling the OPPIDA

The spatial analysis of the late La Tène farmstead

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This paper deals with the analysis of outer and inner structure of one quite illustrative example of a farmstead at the oppidum of Staré Hradisko (central Moravia, Czech Republic). The presented study is based on extensive study of primary documentation and finds, and these non-graphical data are completed with their spatial context by using the GIS methods. Functional analysis performed, is aimed mainly on the spatial concentrations of significant features, artefacts and other important facts contributing to the recognition of this late La Tène spatial unit. Beside of this way defined areas of activities or refuse, several workshops and surface structures interpreted as dwelling houses, ground plans of smaller constructions and other farm-belonging buildings were also recognized.
Thesis:

Case:
- one fully excavated farmstead at the oppidum
- large scale excavation in the past
- settlement pattern unresolved
- functional determination unresolved

Aim:
- spatial analysis of the farmstead
- layouts reconstruction
- functional analysis of the features
- chronology a social reflections
- estimate the population size
  a) within the farmstead
  b) within the oppidum
- basement for the further investigations
Locality -
Czech rep.

Staré Hradisko

area:
central 24.5 ha
bailey 13.5 ha
total 38.76 ha

fortification

farmstead

landscape

elevation: 480 – 542 m asl
Parcel extent:
0.41 ha
excavation: 1965-1987

sunken houses
surface buildings
Spatial dependance of the thickness of the cultural layer

reconstruction from the elevation (topography) data

subsoil level -

cultural layer thickness –
Situation and preservation - of structures in the culture layer (CL) within the parcel

**POSITION OF FIREPLACES - box plot**

- **max 35**
- **min 3**
- **med 14**

**max 47**
- **min 2**
- **med 26**

Preservation of the surface structures according to the subsoil depth

- Stones
- Fireplaces
- Subsoil depth (cm)
  - No data
  - 1 - 17.5
  - 17.5 - 38
  - 38.1 - 50
  - 50.1 - 62
  - 62.1 - 80

**CULT.LAYER_thickness**

- **max 50**
- **min 0**
- **med 26**
Layouts reconstruction -

**PROBLEMS**

historical

- The settlement structure wasn’t usually one-generational but contained many building activities closed within the fenced area.

- Extent depended on the spatial layout out of the whole area of the *oppidum*.

- The traces of building structures within farmsteads suffer from many superpositions and frequent distortion of the structures.

methodical

- Missing data of parameters (profoundation) and fill of sunken features.

- Drawings of the sections of the features weren’t practised.

- Basing only on the general published plans – inexact interpretations.
Approaches -

→ situation of the culture layer – preservation of the surface structures (fireplaces, stone structures)

→ dislocation of the building material - daub, lock mount

→ determinating significant post holes

→ considering the building principes, surveying on geometry

→ surveying on the major building places

Geometric principes
Steps of reconstruction

- Distribution of the daub
- Surveying on geometry
- Major building places
- Highlighting post hole sequences
Steps of reconstruction

post holes
stone fastening
21 ground plans reconstructed
3 discarded = 18

construction:
post trench stone combination
3 groups of surface structures

- smaller husbandry buildings
- husbandry or residential
- extremes husbandry or residential
Sunken houses

husbandry x residential? 
productional x for storage? 
individual x part of the upper construction?
Activities within the farm

STORING

PRODUCING

HOUSING
Architecture and function....?

**Storing**
- presence of crops
- proximity of rotary querns *(questionable)*

**Producing**
- heating devices, structure
- significant finds – tools, waste products

**Housing**
- domestic activities
- (textile production, food preparation....)
- heating device *complicated*
Functional analysis

**Produccion waste**
IRON SLAG
\[ \Delta = 100g \]

**Smith tools**
hammer, forge cleaner, rasper, punch, semi product
Functional analysis

Amber manufacturing
Bronze manufacturing

Keys and lock mount

- balance
- melting pot
- amber working
- amber pearl
- ligature
- forge cleaner
- keys
- lock mount
Functional analysis – FACTOR analysis

PCA analysis – searching for the significant spatial patterns of finds

variables – non ceramic artefacts

FACTOR 1 – hammer, rasper, punch, key, whetstone, tweezers
-smithery
FACTOR 2 – amber pearl, amber raw, semi product
-amber manufacturing

FACTOR 3 – rasper, balance, melting pot, whetstone
-metal production
FACTOR 4 – punch, melting pot, mirror
-metal production
FACTOR 5 – sword, spur, painted pottery
-prestige, housing
Functional analysis – FACTOR analysis

FACTOR 1
iron

FACTOR 2
amber

FACTOR 3
metal

FACTOR 4
metal

FACTOR 5
prestige
Chronology - dealing with stratigraphy...

The case

Possible interpretations

1. BUILDING IS OLDER THAN HEARTH
   hearth in the upper layer

2. BUILDING IS CONTEMPORARY WITH HEARTH
   hearth indicates the floor

3. BUILDING IS YOUNGER THAN HEARTH
   missing upper parts of the post hole fill
Chronology …

**PCA analysis**  
chronologicaly significant artefacts - **fibules**

- Kostr. C  
- Nauheim  
- middle La Tène schema  
- Kostr. D/E  
- Almgren 65

Factor 1 – nauheim  
Factor 2 – middle La Tène schema  
Factor 5 – both  
Factor 4 – Almgren65
Peopling the farm

Population estimate: 20 persons
Farm area: 0.41 ha
Demographic estimate: oppidum
maximal and minimal demographic figures for the oppidum
900 – 1500 inhabitants
94 households maximum

Social reflections –
• presence of prestige finds -(militaria, coins, imports)
• local and distance trade - (amber, iron objects, ceramic)
• favorable location
  (proximity of the main axis of the oppidum)
From the intra site analysis to the surroundings

ACCESIBILITY OF FIELDS - MODEL

... carrying capacity model of the region