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## ORDER IN CHAOS. SPATIAL ANALYSIS OF CREMATED HUMAN REMAINS IN URN BURIALS FROM PODLESIE, SITE 5, OLEŚNICA COMMUNE, ŚWIĘTOKRZYSKIE VOIVODESHIP<sup>1</sup>

### ABSTRACT

A sample of six cremated graves from the Lusatian Culture cemetery from Podlesie, site 5, has been subjected to a spatial analysis aimed at recognising anatomical provenance of bone fragments within the layers of the urn burial. Even though individual features have shown damage ranging from slight to severe, most of the burials have shown an indication of a repeated pattern, with skull fragments predominantly present in the upper layers ( $\chi^2 = 43.968$ ,  $df = 16$ ,  $p < 0.001$ ) and lower limb

fragments accumulated in the lower parts of the urn ( $\chi^2 = 28.635$ ,  $df = 16$ ,  $p = 0.027$ ). In the case of the torso (the term used to describe postcranial axial skeletal fragments together with pectoral and pelvic girdles' elements) and upper limb, the analysis has not shown statistically significant distribution between the layers. The analysis confirmed the advantage of the proposed method in determining the presence of the so-called 'anatomical order' within cremation burials.

**Keywords:** cremation, spatial analysis, Lusatian Culture, Podlesie, urn cremation burial, funeral ritual in cremation

### Introduction

Analysing cremated remains is a time-consuming process. Nonetheless, for many archaeological cultures, periods, and sites, these remains are the only available source of information on the individuals who once were producing all the available artefacts. According to the experience of the author, further corroborated by the recent publication by McKinley,<sup>2</sup> it is unpractical to expect the cremated remains to represent the same type of data that can be acquired from skeletal burials. The nature of cremation will destroy many of the elements that are necessary for a complete osteological analysis. The analysis, therefore, mainly focuses on the reconstruction of patterns in the state of preservation of the cremains, which can, among other things, indicate the presence of differences in the funeral rite.

One of the most common observations made during the excavation and analysis of a cremation grave is the spatial distribution of the remains within the burial. Traditionally, Polish publications, both archaeological and anthropological, are referring to this issue as the occurrence of the so-called 'anatomical order', and nearly every publication indicates whether the remains showed any anatomically logical order or fragments of different skeletal elements were intermixed indiscriminately.<sup>3</sup>

The terminology applied can be misleading, as typically this term is used for remains still presenting the original anatomical articulations between particular bones, indicating an undisturbed primary burial.<sup>4</sup> These conditions cannot be fulfilled in the case of pyre cremation, when the non-uniform character of the environment, together with possible interventions of people present during the ceremony (Fig. 1), may cause

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structive remarks allowed for improvements in the final version of the text.

<sup>2</sup> McKinley 2017, 14.

<sup>3</sup> Durczewski 1959, 140, 143; Piontek 1976, 199, 201; Pyżuk 2004, 42; Wróbel 2014, 226–227.

<sup>4</sup> Duday, Guillon 2006, 126.



Fig. 1. Modern cremation on a traditional pyre, Bagmati River, Pashupatinath, Nepal. Photo by Akiyoshi Matsuoka (CC BY-SA 4.0, online: <https://commons.wikimedia.org/w/index.php?curid=40503441>, accessed 5.04.2019).



Fig. 2. Bone-picking cremation ceremony (*kotsuage*) at the Doi Saien crematorium in Shikokuchuo, Ehime Prefecture, Japan. Photo by O -otamusune -i ku tanken-tai (Autumn Snake) (CC BY-SA 3.0, online: <https://commons.wikimedia.org/w/index.php?curid=1868211>, accessed 5.04.2019).

disruptions in the arrangement of skeletal fragments even in those rare cases when the whole pyre site is inhumated, forming a primary cremation burial (often denoted by the Latin term *bustum*).<sup>5</sup>

In the case of a cremation burial, the term is used typically to indicate that remains originating from a similar position within the body are placed together, implying a systematic and careful collection of the remains still occurring in some cases of modern cremations (Fig. 2). Unfortunately, in many cases, authors of publications do

not specify how the recognition of the anatomical order was made, sometimes only indicating that 'the anatomical order is present'.<sup>6</sup> Even in the cases of detailed descriptions, where the spatial distribution of the anatomical regions was used as an indicator of a funeral rite, *e.g.* a typical way of collecting remains from the pyre site, the individual data was not typically provided, rendering observations and conclusions subjective and hard to compare with other sites and burials.<sup>7</sup> Where data for individual burials are provided, results are presented in

<sup>5</sup> Noy 2000, 186; Deforce, Haneca 2011, 1338.

<sup>6</sup> Durczewski 1959, 143.

<sup>7</sup> Wróbel 2014, 226.

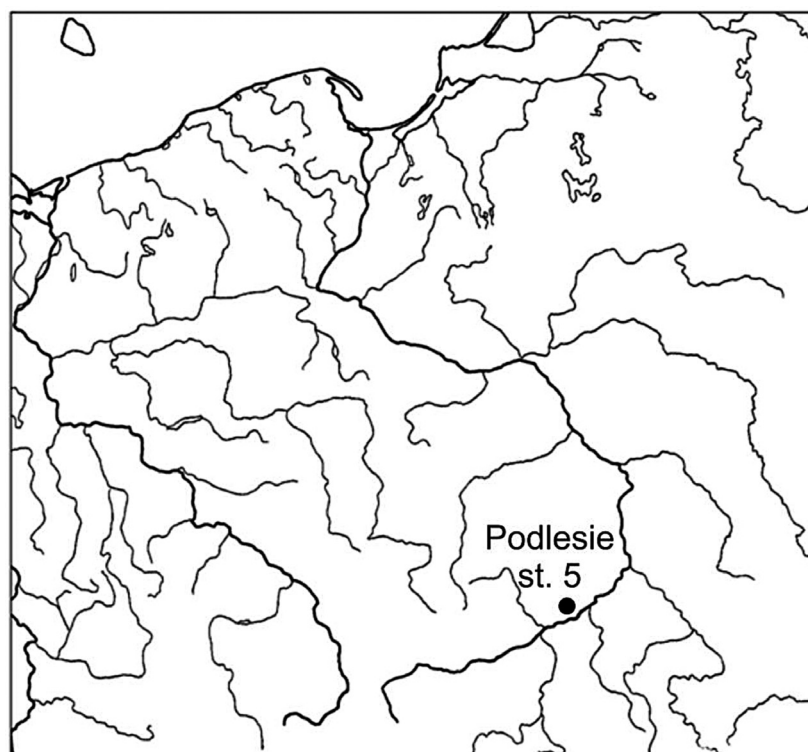


Fig. 3. Localisation of Podlesie, site 5, Oleśnica commune, Staszów district, Świętokrzyskie Voivodeship (drawing by P. Dziechciarz).

qualitative rather than quantitative manner, which does not facilitate the statistical approach.<sup>8</sup> The quantitative method of analysing the spatial distribution of bones should allow for greater objectivity of observation and facilitate comparison of different burials from the same or different sites, cultures, or chronological periods. As the method used by the author permits such an approach, the spatial analysis of the collection of cremation burials from the Lusatian Culture from Podlesie, site 5, presented below is used to assess its potential.

## Material

The analysed collection comes from 12 graves representing the Lusatian Culture from site 5 in Podlesie, Oleśnica commune, Staszów district, Świętokrzyskie Voivodeship (AZP 94-67/35) (Fig. 3). The site has been recognised as a flat burial ground with a dominating post-burial funeral rite that can be attributed to the Lusatian Culture. The site itself has been used as a sand pit by local farmers for a significant period of time (probably several dozen years), and an unrecognised number of features have been previously destroyed (Fig. 4). Some damage has also been reported in the case of the features

selected for the present analysis, and the burials range from nearly intact to nearly completely destroyed (see information in Tab. 1 and Fig. 5.a–d). The full description of archaeological findings has been presented by Paweł Dziechciarz in his bachelor thesis.<sup>9</sup> The analysis of the artefacts implies that the burial ground was used for a significant period of time, from Period IV of the Bronze Age to the beginning of the older Pre-Roman Period, which marks the end of the Lusatian Culture in the area. On the basis of its geographical location and the typology of the pottery, the site can be attributed to the Upper Silesia-Lesser Poland group of the Lusatian Culture.<sup>10</sup>

Due to the character of the present analysis, only graves that were explored in several mechanical layers were selected, resulting in a total number of six features under investigation. The burials differ in the number of exploration layers, as well as the state of preservation of the urns and chronology. Detailed information is presented in Tab. 1. Presumably, each of the burials contained the remains of one individual, as the detailed morphological analysis has not shown supernumerary morphological elements, with the weights obtained not indicative of multiple individuals within the burials (see also 'Results' section). The remains underwent standard sex and age determination (see Tab. 2).

<sup>8</sup> Piontek 1976, 199, 201.

<sup>9</sup> Dziechciarz 2015.

<sup>10</sup> Dziechciarz 2015, 40–41.

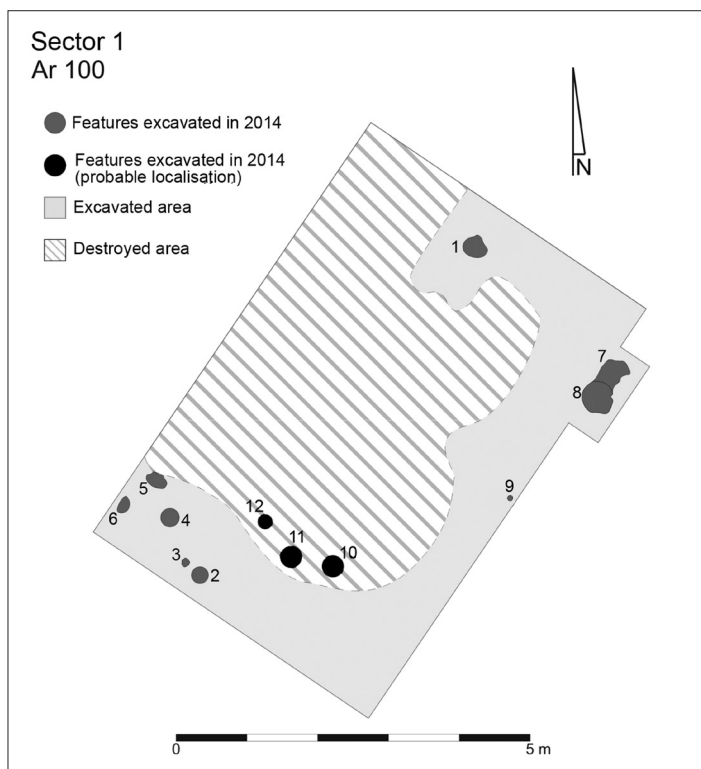


Fig. 4. Plan of the trench no. 1 and the location of the discovered archaeological objects with information on the destruction due to the digging of sand (drawing by P. Dziechciarz).

Tab. 1. List of the analysed burials with detailed information on exploration, state of preservation, and chronology (according to Dziechciarz 2015).

Feature no.	Weight of the remains in grams	Number of layers	Layer thickness	State of preservation	Age	Sex	Chronology
2	978	5	3 cm	Missing hip and shoulder, the lower part of the body mostly intact; the damage attributed to ploughing activity	40 yo	?	Period V of the Bronze Age – Hallstatt D
3	1442.5	5	3 cm	The urn nearly completely destroyed due to environmental factors	> 45 yo	m?	Hallstatt D – older Pre-Roman Period
5	626.5	2	8 cm	The urn severely damaged, only fragments of the body preserved, the remains evenly distributed within the pit	> 45 yo (?)	?	Hallstatt D (?)
8	837	7	3 cm	The upper part of the urn body and a shoulder missing, lower part well preserved; human remains found only within the urn	Adult	?	Hallstatt D – early older Pre-Roman Period
10	1188	6	5 cm	The feature heavily damaged by the digging of the sand	5–40 yo	m	Period V of the Bronze Age
12	945	5	5 cm	The feature heavily damaged by the digging of the sand	Adult	m	Hallstatt D



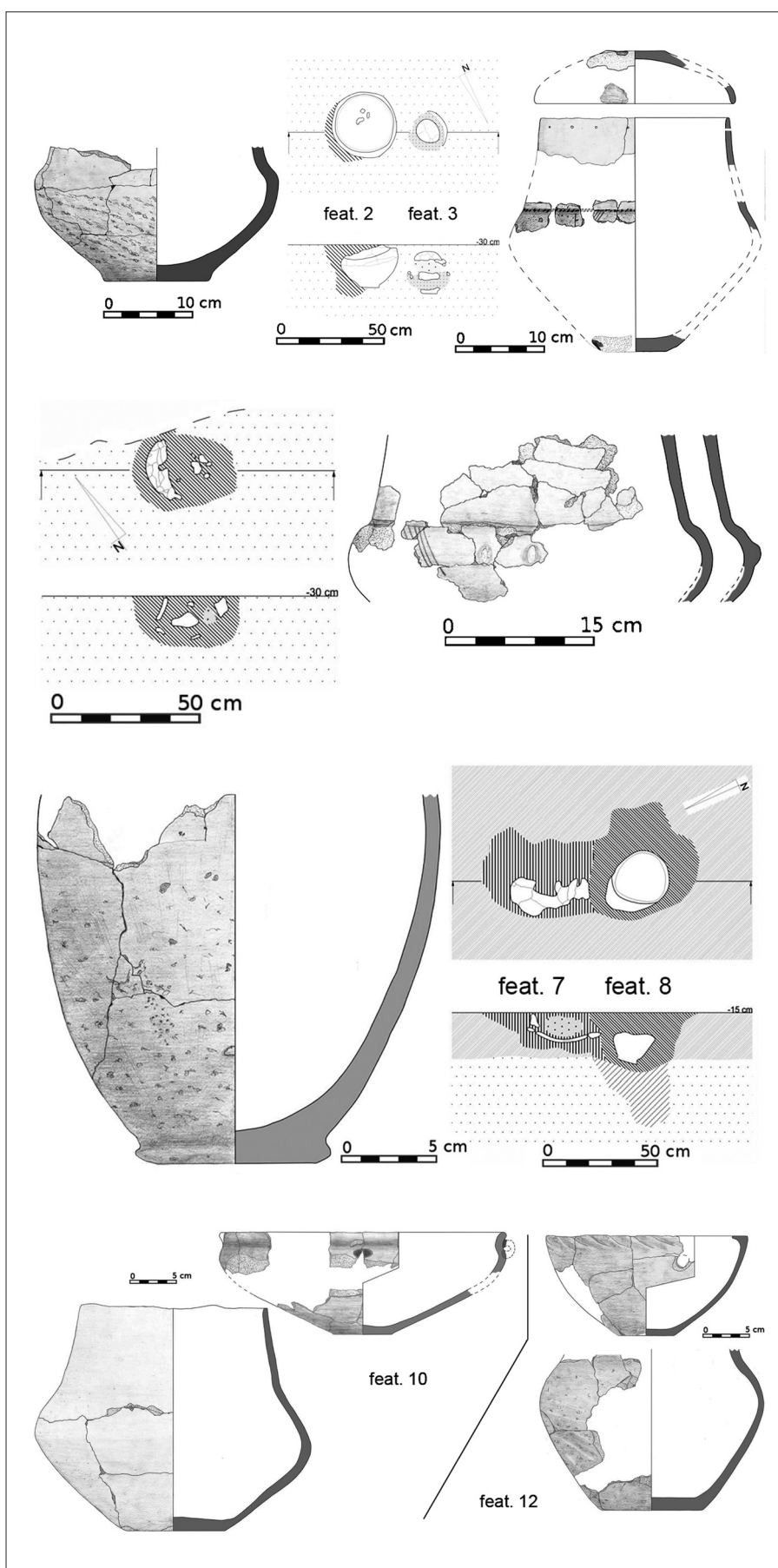


Fig. 5. Plans and stratigraphy of the analysed features with urn documentation: a. Features nos 2 and 3; b. Feature no. 5; c. Feature no. 8; d. Features nos 10 and 12 (only urns, see text for details) (drawing by P. Dziechciarz).