

Lena Loerper – Albrecht Jockenhövel – Dieter Dirksen

Re-inspection of the Megalithic Art of the Gallery-Grave at Züschen/Lohne, Germany, with Optical 3D Measurements Techniques

Abstract: The gallery-grave of Züschen (Federal State of Hesse, Germany) was discovered and excavated as early as 1894. It has become famous for its decoration showing bovines and cart-like signs. In addition, a motif known as the “Eye Goddess” was found on the inside of the wall stones. Thus the grave is one of the most important Neolithic monuments in Germany. As environmental influences such as rain, frost and rising groundwater have damaged the grave and especially the decorations, there is reason enough to re-inspect the grave using modern documentation methods. With the help of optical three-dimensional measuring techniques, such as photogrammetry and optical profilometry, a new and improved documentation of the decoration is proposed, which can give us further insight into the total number of symbols, into the way they were carved onto the stone and into possible ornaments that overlap each other.

Introduction

More than 100 years ago, in 1894, the gallery-grave Züschen in Hesse, Germany, was discovered and excavated by Johannes Boehlau and Felix von Gilsa zu Gilsa. The grave is set into the ground and is approximately 19 m long and 3.5 m wide. As its antechamber is separated by a port-hole slab in the east, its construction can be categorized as being in line with similar installations of the Wartberg culture (2nd half of the 4th millennium) (*Fig. 1*).

Upon its discovery, miscellaneous symbols were already able to be identified on the insides of individual wall-stones, which is why this grave from the so-called “Herzynische group” has been ranked as a historical ground-monument of European importance.

Stylised motifs of bovines predominate among the decorations. They take the form of fork-like fig-

ures, which occur individually or in combination with yoke-and-shaft/drawbar constructions. Also, there are wagon-like structures, that can be regarded as being one of the oldest representations of carts ever found in Europe. Apart from the ornamented wall-stones a red sandstone plate was salvaged from inside the grave, showing bovine and wagon representations. In addition, geometrical motifs like single or double zigzag lines and herringbone patterns could be distinguished.

The familiar image of the Eye Goddess links the grave of Züschen to the graves in the Paris Basin, in which this image also appears. On the basis of its rich ornamentation, the grave of Züschen, one of the most important megalithic monuments of Central Europe, also takes a special position among the gallery-graves of France, East Westphalia and North Hesse.

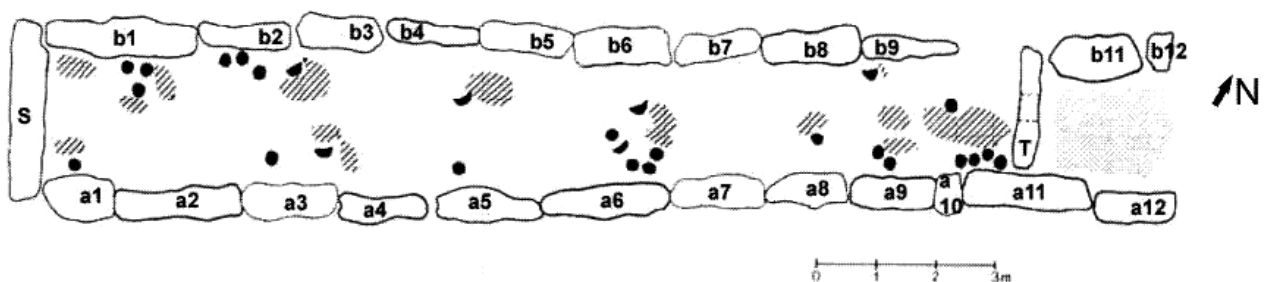


Fig. 1.

State of Documentation – Ornamented Stones

The current state of documentation of the grave is based mainly on the drawings and photographs of the individual decorated stones, which were published in 1898. In the last century additional monochrome pictures were taken and partially published. Latex copies were made, and replicas of some stones were produced. The drawings, sketches and photographs which have been the subject of earlier studies will form the basis of this treatment, which is why a concise summary of these resources is given in the next paragraphs.

In their publication “Neolithische Denkmäler aus Hessen” (BOEHLAU / VON GILSA 1898), scientists Boehlau and von Gilsa zu Gilsa, who were the first explorers of the Züschen gravesite, pointed out stones number a1, a5, b1–3, the capstone and the porthole slab as being “embellished”. A number of excellent drawings of all stones that showed any sign of treatment, except the capstone, can be found in this publication. Until 1978, only one monochrome picture of the capstone existed. I. Kappel published an exact drawing of this stone with its motifs as part of her paper “Steinkammergräber und Menhire in Nord-Hessen” (KAPPEL 1978).

In March 1961, H. Heintel found further pecked marks on stones b7, as well as on a3, a7, a8, a10, b5 and b6. In his essay, collected in “Fundberichte aus Hessen” (HEINTEL 1966), he only gives a few sample descriptions of individual elements, illustrated by some monochrome pictures. There are no further drawings of the newly discovered images.

Considering the extraordinary archaeological significance, an up-to-date and internationally accessible documentation of the grave, and of its ornamentation in particular, is highly desirable. It is our aim to bring the Züschen grave into the focus of Western European research on ornamented megalithic graves. Another reason to carry out this improved modern documentation is the fact that the grave, and the decoration in particular, are being damaged by environmental influences.

It is our plan now to undertake a detailed survey of the grave and its symbols with the help of new methods which were developed at the Laboratory of Biophysics at Münster University. These methods, based on photogrammetry and optical profilometry, are not presented in this paper. Here we only show the first results of the 3D measurements, which should give insight into the exact number of motifs,

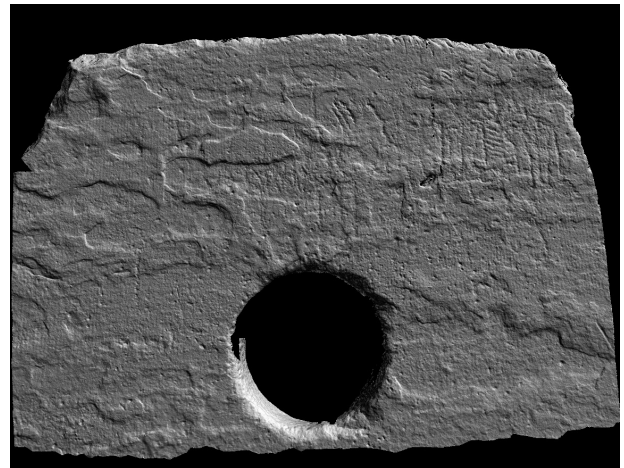


Fig. 2.

their distribution pattern and the technique used for engraving.

Treatment

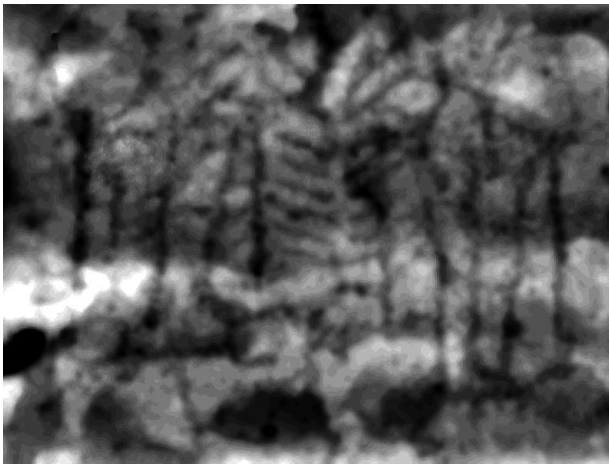
The work in progress is carried out with the aim of securing a full documentation of the grave stones. In order to introduce some of the results of our research we will first deal with the question of whether the new technique can help reveal previously undocumented symbols.

Is it possible to find still unknown motifs on the stones? If so, such ornaments should be fully described, i.e. their type as well as their form, their situation on the stone and possibly its orientation. Possible overlaps of individual motifs are of particular interest.

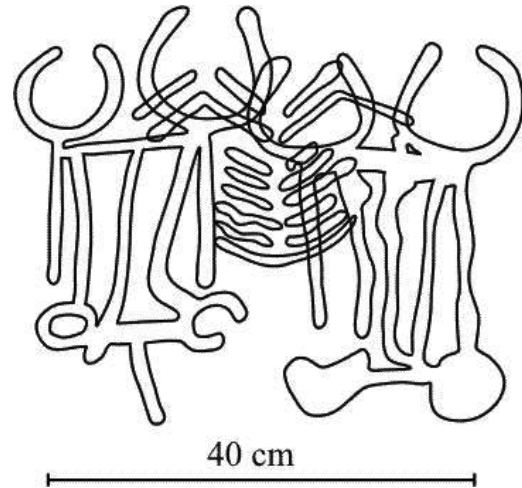
Examples

The following paragraphs deal with some examples of how previously invisible ornaments were discovered. The porthole slab turned out to be especially interesting for this. The 1.4 m high and 2 m wide porthole slab with its porthole approximately 50 cm in diameter separates their main chamber from a smaller ante-chamber and forms the entrance into the grave (Fig. 2).

On this stone, the right upper area below the big zigzag line is of special interest. The stone does not only show the vertical lines beside the herringbone pattern, as they were known from the drawings published earlier, but also representations of



a



b

Fig. 3.

oxcarts, which feature on other stones in the grave (Figs. 3, 4). Unfortunately these complex patterns are hardly visible to the eye today. They are described in the following paragraph.

There are two oxcarts, consisting of two forked signs and additional lines.

The left figure (Fig. 4a) consists of two forked signs linked through a cross-line below the half-bows. From this line, usually interpreted as a yoke, another line comes off at a right angle. In its course it slightly arches to the left and meets an additional line. This latter line connects an ornament which can best be described as two almost complete rings. Another line comes off from the aforementioned line, running diagonally to the bottom right. Furthermore, there is one line between the forked signs and what has previously been interpreted as a kind of drawbar. Both lines originate from the link between the "yoke" and the forked signs. They run in a slight arch until they meet the circular shapes on each side. This latter line connects an ornament which can best be described as two almost complete rings. Another line comes off from the aforementioned line, running diagonally to the bottom right. Furthermore there is one line between the forked signs and the drawbar. Both lines originate from the link between the "yoke" and the forked signs. They run in a slight arch until they meet the circular shapes on each side.

An almost identical figure can be seen to the right (Fig. 4d). This portion is more difficult to identify, and some parts seem to have vanished completely. Further research is necessary to supply additional information. The examples of forked signs men-

tioned above put the port-hole stone and its motifs in line with the other decorated stones of the grave, since there is now proof that the stone has depictions of bovines.

However, some differences from the other representations of oxcarts occur. The representation of the wheels as circles deviates from those found in other parts of the grave. Each has the form of a so-called cup mark, i.e. a round deep pit. Also, the lines between the drawbar and the forked signs are unique to this image.

Other representations of bovines linked by additional lines can be seen on stone b2 for example (Fig. 5).

Probably the best known image of a two-wheeled oxcart with a half-round car-box, drawn by two bovines, can be seen on stone b1 (Fig. 5).

As mentioned before, a herringbone pattern can be made out between the fork-shaped figures (Fig. 4b). It is remarkable here that the right half of this pattern partly covers up some elements of the oxcart depicted further to the right (Fig. 3). This observa-

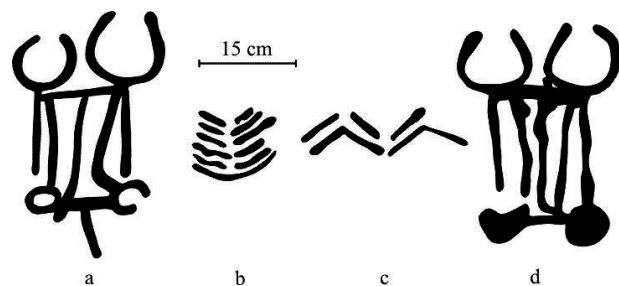


Fig. 4.

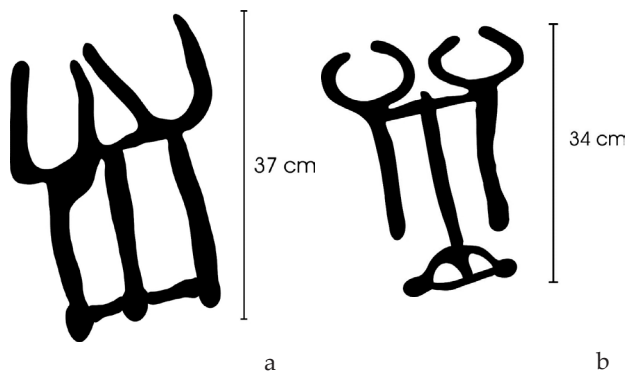


Fig. 5.

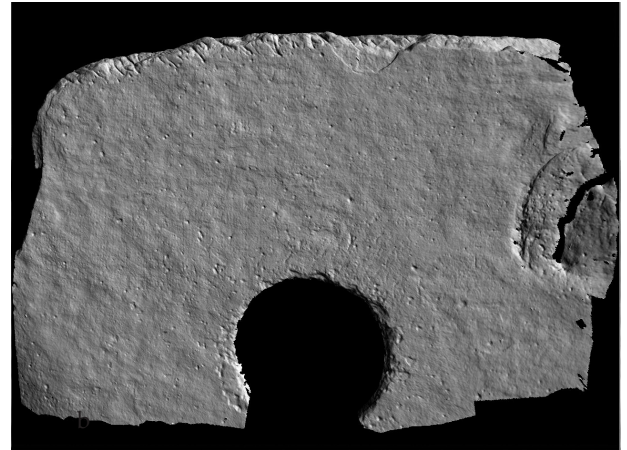


Fig. 6.

tion raises questions as to the temporal sequence of the attachment of the individual ornaments and to the possible combination of several signs.

Also in this part of the stone surface, the zigzag line which is shown twofold in some parts intersects some elements of the oxcarts (*Fig. 4c*). It is also striking that it seems as if the line's alignment has obviously been influenced by the orientation of the her-ringbone pattern (*Fig. 3*).

Now that we have found so much decoration on the side of the port-hole slab, which points towards the inside area of the grave, it will be interesting to see whether there are any symbols on its other side. With the naked eye it is impossible to see any decoration and even with the help of the new methods we still cannot find any symbols. The surface of its back side is quite flat and clean. It seems to be clear that there has never been any decoration on the side of the grave entrance (*Fig. 6*).

Another very important stone with a lot of decoration in this grave is stone b2. There you can find the well-known "Eye Goddess" ornament. Unfortunately, the part that surrounds this symbol is problematic. Here, as well as in other parts of the grave, the rock surface has been severely damaged. The Eye Goddess can be reproduced almost completely, but some areas around it cannot be interpreted any more, or at least remain rather debatable. However, it seems likely that there is only one half-circle above the Eye Goddess, instead of the two circles described in earlier studies (*Fig. 7*).

Conclusion

The example of the porthole stone described in this short paper shows that new 3D visualization technology as applied in Züschen opens up new possibilities in data collection and documentation. Although some of the ornaments on the rock-surface are in a very bad condition today and are no longer (or only partially) visible to the eye, the new technology allows the rediscovery of seemingly lost or still undiscovered ornaments.

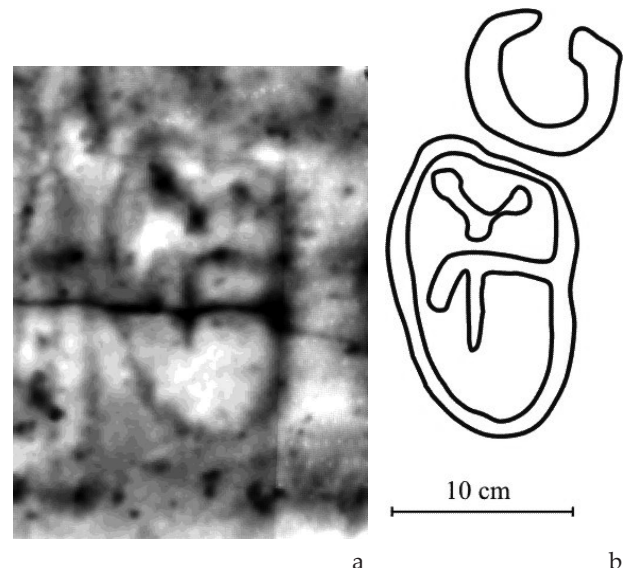


Fig. 7.

This conclusion may be a basis for further research on iconography and symbolism of the megalithic art of farming societies in Central Europe.

References

BOEHLAU / VON GILSA 1898

J. BOEHLAU / F. VON GILSA ZU GILSA, Neolithische Denkmäler aus Hessen. Zeitschrift des Vereins für hessische Geschichte und Landeskunde, Neue Folge, Supplementheft 12 (Cassel 1898).

HEINTELL 1966

H. HEINTELL, Weitere Zeichensteine im Steinkammergrab von Züschchen/Lohne (Kr. Fritzlar-Homberg). Fundberichte aus Hessen 5/6, 1965/1966, 78–80.

HERRMANN / JOCKENHÖVEL 1990

F.-R. HERRMANN / A. JOCKENHÖVEL (eds.), Die Vorgeschichte Hessens (Stuttgart 1990).

KAPPEL 1978

I. KAPPEL, Steinkammergräber und Menhire in Nordhessen. Führer zur Nordhessischen Ur- und Frühgeschichte 5 (Kassel 1978).

Lena Loerper
Albrecht Jockenhövel

Westfälische Wilhelms-Universität Münster
Historisches Seminar
Abteilung für Ur- und Frühgeschichtliche Archäologie
Robert-Koch-Str. 29
48149 Münster
Germany
jockenh@uni-muenster.de

Dieter Dirksen

Westfälische Wilhelms-Universität Münster
Labor für Biophysik
Robert-Koch-Str. 31
48149 Münster
Germany