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Achaemenid and Sassanian Trousers from Douzlakh Salt Mine at Chehr Abad, Iran

Introduction

Up until now trousers from the Achaemenid and Sassanian periods have only been known from ancient depictions. The most famous examples from Achaemenid times are the reliefs of the eastern stairway of the Apadana in Persepolis, showing the variety of ancient Persian costume. But of course these reliefs don't tell us anything about the material details of the trousers themselves, like the pattern, the weave or the colour. As such, the discovery of the salt mummies at Chehr Abad with all their well-preserved clothing is a matter of special importance. For the first time it has now been possible to examine and understand the weaving and sewing technology of original, pre-Islamic trousers. The first results are presented in this short article.

The trousers from Chehr Abad

The items which are introduced in this article consist of one pair of woollen trousers and three fragments identified as trousers, discovered in the ancient salt mine of Chehr Abad in the northwestern region of Iran. The findspot of Chehr Abad was a multiperiodical salt mine and used during the Achaemenid and Sassanian periods. From time to time, galleries inside the mine collapsed and buried the miners alive, together with their clothing, tools and everyday objects (Abolfazl *et al.* 2012, 61-81).

Since 1994 many finds have been unearthed during several excavations of the "Saltmine Exploration Project", a collaboration between Iranian archaeologists and the Ruhr University of Bochum. Most of the finds are associated with the radiocarbon-dated human remains of the so-called "Saltmen" from the Achaemenid and Sassanian periods (Pollard *et al.* 2008, 137). Due to the salty environment, the mummies, their clothes and all other organic material are partly in an excellent state of preservation. The archaeological analysis is important, since Achaemenid and Sassanian trousers were only known from ancient depictions. In February 2014 the technical studies on the weaving structures, e.g. the spin direction of the threads and the pattern, were undertaken in the Museum of Zanjan.

Contrary to first assumptions and rather surprisingly, there are some similarities in the pattern and the weaving between the trousers of Chehr Abad and their Mediterranean and northern European counterparts. In particular the so-called Thorsberg trousers, the Damendorf trousers and one pair of linen trousers from Egypt can be cited here (Schlabow 1967, 76-77; Farke 1993, 69-81; Hodak 1996, 293). Finds No. 131 and 132 from Saltman 2 (430-570 AD), a radiocarbon-dated Sassanian mummy (Pollard *et al.* 2008, 138-140), indicate that the trousers' reverse and crotch were also sewn together by rectangular and presumably



Fig. 1.
Find No. 131 and No. 132 from Saltman 2. Reverse side of a pair of trousers:
Find No. 131: width 30 cm, length 40 cm.
Find No. 132: width (at belt loop) 37 cm, width (mid) 16 cm, length 40 cm
(Photo: Krug-Ochmann).

triangular yoke sections (Fig. 1). Yoke sections are very characteristic of trousers; their purpose is to join the reverse and crotch with the garment's front side and legs. The Zanjan trousers are as such more closely related to Northern European than Mediterranean trousers. The latter have a triangular yoke section located at the leg's reverse side – not at the crotch, as verified in northern European trousers. Inversely, the weaving structure of all the Zanjan trousers are tabbies, correlating more to Mediterranean trousers, such as one pair of linen trousers from Egypt in the Museum Kunstpalast Düsseldorf or one pair of linen trousers in Damascus (Hodak 1996, 293; Pfister 1951, 26; Kwaspen 2013, 252-263). Northern European trousers are mainly woven in a twill weave. In some respects the trousers of Zanjan represent a technical combination of northern European and Mediterranean trousers.

The weave structure of this two above mentioned fragments is a weft-faced tabby. Warps and wefts are made of unpigmented wool and S-spun, the thread count is nearly 17 weft and 14 warp per cm. The sewing thread of the trouser legs' flat-fell seam and of the belt-loop is z-spun and s-twisted. The belt loop was created by reverting and fixing the upper waist part of the garment (Fig. 2).

Further technical examinations of a fragment also associated with Saltman 2 prove that it represents a very unique type of trousers – hitherto unknown. The analysis indicates that the three pieces sewn together are part of the front side of a pair of very tight shorts. In fact there are no trouser legs; the lower parts of the pants are reverted and fixed in the lumbar region. So these tight shorts reached only over the pelvic area, just covering the buttocks and the iliac region. The upper thighs were not covered. The cut seems to be identical to a comparable Sassanian pair of trousers



Fig. 2. Belt-loop of find No. 131
(Photo: Krug-Ochmann).



Fig. 3. Find without inventory number (tight shorts). Half-basket weave with single s-spun warp and paired s-spun wefts. Width 36 cm (at belt loop), length 25 cm (Photo: Krug-Ochmann).



Fig. 4. Find without inventory number (tight shorts). Butt-seam (Photo: Krug-Ochmann).

of Saltman 1, which is now lost. The single pieces of the trousers indicate two different weave structures of undyed wool, a very fine tabby (as a patch) and a half-basket weave with a single hard s-spun warp and two paired loosely s-spun weft threads (Fig. 3). The weave has a thread count of nearly twelve warps and seven paired (making 14 threads/cm in total) wefts per cm. The different parts are sewn together using a butt seam (Fig. 4). Unique is also the fact that the belt is still inside its loop (Fig. 5).

The woollen pair of trousers of Saltman 4 (405-380 BC) is complete and forms part of the mummy. Saltman

4 is the best-preserved mummy of the Douzlahk Salt Mine at Chehr Abad. It was radiocarbon-dated to the Achaemenid period (Pollard *et al.* 2008, 140-141) and has been identified as a young man who died in a mining accident. The cause of his death was a broken neck, and he was killed while crawling on all fours. But his discovery represents a golden opportunity to learn more about the way the trousers were worn, the combination with other garments and finally about the sociological context of the individual himself.

Due to the salty atmosphere, the mummy textiles are inelastic and difficult to examine. The baggy pair of



woollen trousers is partly covered by a long tunic; hence the upper parts of the trousers are not visible. The weave structure is a tabby with a z-spun weft and an s-spun warp. The thread count is nearly eight weft and eleven warp per cm. However, two further characteristics could be detected: the side seam runs alongside the trouser leg. But in the amount of the lateral thigh there is an opening. It is not a damage of the seam, but has been left open on purpose. It calls to mind a pocket, although it is not backed with fabric and was therefore useless as pocket (the skin of the mummy's leg is visible) (Fig. 6). The side seam itself alongside the trouser leg is not visible, since it is covered by a red woollen fancy-effect thread, which is stitched as decorative element on the actual side seam (Fig. 7).

Achaemenid imagery confirms the presence of baggy pairs of trousers. The most famous example is the eastern stairway of the Apadana in Persepolis, the great audience hall of the Achaemenid kings. The stairway is decorated with reliefs, showing the variety of the empire's nations. Median, Armenian, Bactrian, Cappadocian and Skythian people are depicted wearing baggy trousers (Walser 1980, Fig. 15-28). The Skythian and Cappadocian people even bring trousers as a present or tribute for the king. All trousers which are depicted have in common that they seem to be as loose as the woollen pair of trousers of Saltman 4. Regrettably there is no ancient imagery of the short Sassanian type of trousers.

Conclusion

The trousers of Zanzan are noteworthy in every sense: based on the pattern and weaves they apparently represent a technical combination of northern European and Mediterranean trousers. While their weave (all are tabbies) correlates with trousers from Egypt or the Levant, it seems that the pattern, especially the position of the yoke sections, corresponds more with Northern European trousers. Hitherto unknown is a very special type of a short pair of trousers from the Sassanian era most comparable to modern shorts. Two pairs of trousers of this type have been identified: one by a fragment from Saltman 2 and another from Saltman 1 – the latter of which is only recorded by a photo and is sadly now lost. Future research will discuss the function of this short pair of trousers. Since one pair of long trousers is already assigned to Saltman 2, the question arises of whether the short pair of trousers are a kind of undergarment. Finally, future thoughts will help to reconstruct the most likely patterns of Achaemenid and Sassanian trousers.



Fig. 5. Find without inventory number. Upper waist-part of a very short pair of trousers with belt still inside its loop (Photo: Krug-Ochmann).



Fig. 6. Saltman 4. Amounting to his right leg's thigh the trousers' side seam is partially left open. The mummy's skin is visible (Photo: Krug-Ochmann).



Fig.7. Saltman 4. Seams covered by a red woollen fancy-effect thread (Photo: Krug-Ochmann).



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