#### FASCICULI ARCHAEOLOGIAE HISTORICAE FASC. XXIII, PL ISSN 0860-0007



# KRISTÝNA URBANOVÁ

# SHROUD OR BURIAL DRESS?

POSSIBILITIES FOR INTERPRETING TEXTILE FRAGMENTS FROM THE MIGRATION PERIOD FOUND ON THE SITE IN ZÁLUŽÍ NEAR ČELÁKOVICE.

#### Introduction

This article deals with the testimonial value of textile fragments found during archaeological research. It focuses on a group of skeleton graves from the Migration Period on the site in Záluží near Čelákovice (Central Bohemia Region). On the example of review of the research from the first half of 20th century it also shows the problems archaeologists are facing when interpreting textile fragments and using insufficient research documentation!

# Záluží near Čelákovice

The site from the Migration Period was situated in a slightly sloping area between the Prague – Čelákovice railway line and the road running from Čelákovice Railway Station in the west direction, in the grounds of the former Líman Brickworks<sup>2</sup>. The total number of graves on the site is not exactly known – it is from 71 in the bibliography to 52 graves in the inventory of the Prague National Museum (thereafter referred to as "PNM")<sup>3</sup>. The large majority of the graves were oriented in the west–east direction and bore the traces of grave robbing which was a common practice in that period in the area of the Czech Republic.

The research of Prof. Dr. J. Schránil, from which the studied textile fragments all come, started on 16. 6. 1930. This research was preceded by opening several graves during the excavations and a short study of the graves conducted by L. Hájek. The research documentation reserved Dr. Schránil for himself. His documentation consists of sketches of grave positions not to scale and brief descriptions in small notebooks. Most graves were also photographed *in situ*. The objects found were, and still remain, deposited in the Prague National Museum. The results of this research

Conservation of objects was done only partly or not at all, conservation method is unknown, there is no research documentation in existence.

# Textile fragments from skeleton graves

Textile fragments found in the context of graves are the type of archaeological finds most prone to damage, be it because of their fragility which often predestines these fragments to disintegration during excavation process or because an inappropriate excavation method used means that these are not even recognised and destroyed in the process. As the soil conditions in the Czech Republic are not at all favourable for preservation of organic materials, this situation is mostly due to the metal corrosion processes. In skeleton burials, but also in urn burials, we most often come across textile preserved on metal parts of the dress, e.g. buckles, brooches, strap ends, etc. The presence of textile is indicated by the characteristic colouring of soil surrounding a metal object4. Unfortunately, it was not a general practice to monitor colour changes in soil and to adjust the excavation method to allow finding organic materials which resulted, as will be shown below, in destruction of documentary evidence for the find itself and for the precise interpretation of the find.

The presence of textile fragments was recorded in 5 graves – graves nos. 13/VIIIa, 22/XVII, 26/XXI, 35/XXXI and 39/XXX, on the site in Záluží near Čelákovice. Only a part of the textile fragments referred to in the literature<sup>5</sup> were found (see the list below and, also, Table 1). The missing textile fragments probably did not survive the ravages of time or they were not recorded and deposited in the PNM. The textile fragments that had been found were

were published several times in periodicals but a full monograph had never been published.

<sup>&</sup>lt;sup>1</sup> The article was based upon part of research, financed by grant of Charles University in Prague "Clothing and textile production in Czech lands during the Roman and Migration period". Thanks belongs also to foundation Pro Archaelogia Saxoniae and Gerhard Bersu scholarship.

<sup>&</sup>lt;sup>2</sup> E. Droberjar, Archeologie doby římské v Čechách a na Moravé (Archeology of Roman Period in Czechlands), Praha 2003, p. 41.

<sup>&</sup>lt;sup>3</sup> B. Svoboda, *Čechy v době stěhování národů* (Bohemia during the Migration Period), Praha 1965, p. 283. Controlled in the inventory books of PNM.

<sup>&</sup>lt;sup>4</sup> S. Mitschke, Zur Erfassung und Auswertung archäologischer Textilien an korrodiertem Metall. Eine Studie zu ausgewählten Funden aus dem Gräberfeld von Eltville, Rheingau-Taunus-Kreis (5. – 8. Jh. n. Chr.), "Kleine Schriften", vol. 51, Marburg 2001. Also H. Farke, Archäologische Fasern, Geflechte, Gewebe. Bestimmung und Konservierung, Weimar 1986.

<sup>&</sup>lt;sup>5</sup> B. Svoboda, Čechy v době stěhování národů (Bohemia during the Migration Period), Praha 1965, pp. 284, 286 - 7, 289-290.

reviewed and subjected to the textile technology research<sup>6</sup>. The part of these finds were already published<sup>7</sup>. No other textile fragments, which are not mentioned in the literature, were found during the reviewing process.

## Grave no. 13/VIIIa (Fig. 1)

**Find description:** An unusually deep grave, oriented in west-east direction, containing a skeleton of adult male. The votive offerings found in the grave included a brown/black bowl—shaped vessel with the remnant of a metal fitting on the right side of the vessel. The set is deposited in the PNM with Inventory nos. H1-43 465-4738.

Objects with textile fragments: The deceased, who was about 40-ear old, was covered with a wooden plank the traces of which were found next to the skull, on the pelvis and on the feet. The deceased was perhaps wrapped in linen cloth, the imprints of which were apparently found on the iron fragments recovered from the grave during excavation<sup>9</sup>.

On the basis of the reference above we carried out a review of the finds recovered from Grave no. 13/VIIIa. Unfortunately, no remains of textile fabric had been found. They were probably removed from the objects during their extraction from the grave or during their delivery to the PNM.

#### Grave no. 22 / XVII (Fig. 2)

**Find description:** A skeleton of an old man found in the grave oriented in the west–east direction at the depth of 210 cm. Bones were found to be jumbled up in a most disorderly fashion.

**Objects with textile fragments:** A small ball-shaped glass bead found next to the skull, together with the silver, gold-plated Thuringian brooch with C-shaped head plate and the footplate with a long pin-lug bearing a series of transverse ridges on which the imprints of linen cloth were found. The set is deposited in PNM under Inventory nos. H1-43510-43512<sup>10</sup>.

On the basis of the reference above we carried out a review of the finds recovered from Grave no. 13/VIIIa. Unfortunately, no remnants of textile fabric had been found. They were probably removed from the objects during their extraction from the grave or during their delivery to the PNM.

# Grave no. 26/XXI (Fig. 3)

**Find description:** Undisturbed female grave oriented in the west–east direction. Votive offerings found in the grave included a pig bone, small bowl, glass necklace, shell of *Cypraea vimosa*, aureus of Emperor Athemius, two S-shaped silver, gold-plated brooches, oval-shaped iron buckle, two S-shaped, silver, gold-plated brooches, an oval–shaped iron buckle, a whorl, a small lump of resin, fragments of iron and bronze objects. The objects are deposited in the PNM under Inventory nos. 43 526-55<sup>11</sup>.

**Objects with textile fragments:** Iron stud Inventory no. H1-43 529 (Fig. 4), dimensions: diameter 5.3 cm, thickness 0.8 cm. Remnants of woven fabric were found on the both sides – heavily damaged. Side A – remnants of woven fabric apparent on the inner and outer sides of the ring. Side B – a fragment of woven fabric preserved over nearly the whole area of the stud.

# Analysis of textile fragment (Fig. 5):

Heavily damaged.

*Binding:* Twill (more detailed determination uncertain due to heavy damage).

Thickness of threads: Between 0.5 and 0.9 mm.

*Torsion:* First system Z, second system S.

Thread count]: 12(?) x 9 (?) per cm.

Colour: Rusty brown (due to the corrosion of iron), original colour unknown.

Material: Unknown (due to the strong corrosion of iron and damage).

#### Grave no. 35/XXXI (Fig. 6)

**Find description:** A grave oriented in the west–east direction containing a well-preserved skeleton of an adult man. The votive offerings found in the grave included two vessels, a piece of silver wire, an iron ring, iron fragments, probably a knife, found between the knees. The objects are deposited in the PNM under Inventory nos. H1-43 738-43<sup>12</sup>. Two small remnants of textile were found on the last two of the metal objects mentioned above.

**Objects with textile fragments:** Inventory no. 43743 – two small fragments of heavily damaged iron object (probably a knife or a dagger) together with decayed organic material. Inventory no. H1-43743a – dimensions 2.0x1.4 cm (fragmen no. 1). Inventory no. 43743b – dimensions 1.8x1.0 cm. Textile fabric was always preserved on the upper side of the object.

# **Analysis of textile fragment** (Fig. 7):

Two fragments of the same type of textile.

Dimensions of the fabric preserved: fragment no. 1  $1.8 \times 0.8$  cm; fragment no.  $2 - 1.5 \times 0.5$  cm.

Binding: Twill - twill 2/2.

Torsion: Weak, apparently Z in both cases.

<sup>&</sup>lt;sup>6</sup> Made by author of this article in laboratory of PNM.

<sup>&</sup>lt;sup>7</sup> K. Urbanová, Soubor textilních pozůstatků z doby stěhování národů ze sbírek oddělení prehistorie a protohistorie Národního muzea v Praze (Textile fragments from collection of Roman and Migration Period from PNM), [in:] Barbarská sídliště, edd. E. Droberjar, B. Komoróczy, D. Vachůtová, Brno 2009 pp. 531-542.

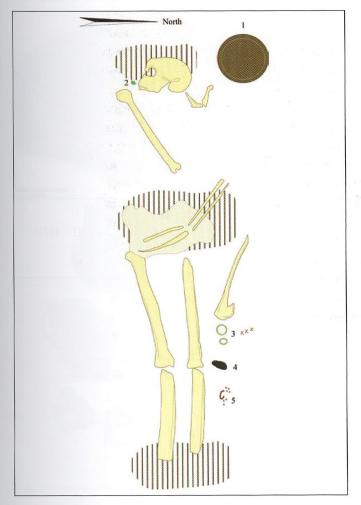
<sup>&</sup>lt;sup>8</sup> B. Svoboda, *Čechy v době stěhování národů* (Bohemia during the Migration Period), Praha 1965, pp. 284, 286-287.

<sup>&</sup>lt;sup>9</sup> *Ibidem*, p. 284.

<sup>10</sup> Ibidem, p. 286.

<sup>&</sup>lt;sup>11</sup> *Ibidem*, pp. 284, 286-287. Textile fragments published in K. Urbanová, *Soubor textilních pozůstatků*...

<sup>&</sup>lt;sup>12</sup> B. Svoboda, *Čechy v době...*. Textile rests published by K. Urbanová, *Soubor textilních pozůstatků*, pp. 531-542.



North

2

3

9?

6th

6th

Fig. 1. Plan of grave 13/VIIIa: 1 – vessel, 2 – mounting (?), unreadable record of J. Schránil, not in NM inventory, 3 – bronze rings and rests of iron with fabric (?), 4 – pitch, 5 – rests of iron buckle. Rests of wooden board next to the skull, on the pelvis and on the feet. Not to scale. Drawing by K. Urbanová based on primary documentation of J. Schránil.

Fig. 3. Plan of grave 26/XXI: 1 – vessel, 2 – animal bone, 3 – scissors, 4 – golden denarius, 5 – iron buckle, 6a, b – silver gilded fibulas, 7 – whorl, 8 – ring, 9 – necklace and shell of cyprea. Not to scale. Drawing by K. Urbanova based on primary documentation of J. Schránil.

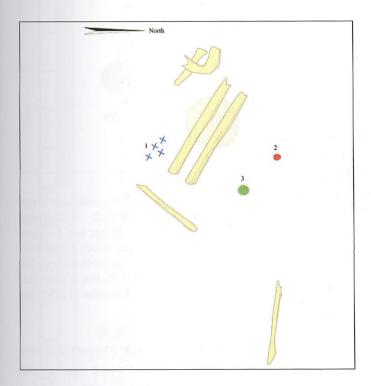


Fig. 2. Plan of grave 22/XVII: 1 – fragments of comb (?), unreadable record of J. Schránil, not in PNM inventory, 2 – bead, 3 – silver gilded fibula. Not to scale. Drawing by K. Urbanova based on primary documentation of J. Schránil.



Fig. 4. Iron ring inv. no. H1 – 43529, National Museum Prague. Photo L. Káchová.



Fig. 5. Fabric – twill – extant within inv. no. H1-43529. Microscopic picture, enlarged 6,3x, photo K. Urbanová.

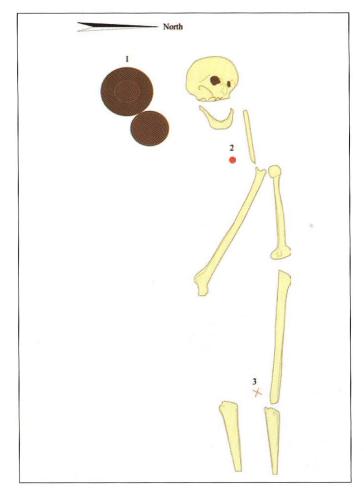


Fig. 6. Plan of grave 35/XXXI: 1 – two vessels, 2 – silver wire (maybe coiling of fibula), 3 – fragments of iron objects, probable place of find of piece of knife with textile inv. No H1-43745. Not to scale. Drawing by K. Urbanová based on primary documentation of J. Schránil

Thickness of threads: Warp 0.3 (smallest dimension), on average about 0.9 mm, weft 0.9 mm on average.

Thread count: Warp – weft 9 threads in 8 mm (max. preserved width), warp 11-13 in 10 mm.

Colour: Rusty brown (due to the corrosion of iron), original colour unknown.

Material: unknown (due to the strong corrosion of iron).



Fig. 7. Fabric – twill 2/2 – extant within inv. no. H1 – 43743, detail enlarged 8x. Photo K. Urbanová.

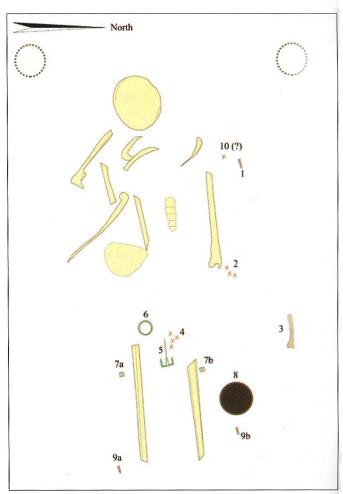


Fig. 8. Plan of grave 39/XXXV. Traces of wood-construction in corners: 1 – silver mounting/fitting from dish/bowl, 2 – rests of iron, 3 – animal bone, 4 – rests of iron knife, 5 – bronze key, 6 – bronze ring, 7 a, b – bronze buckles, 8 – vessel and sherds from another vessel, 9 – silver belt mounting/fitting, 10 – probable place of find of bronze mounting/fitting with textile remains (?). Not to scale. Drawing by K. Urbanová based on primary documentation of J. Schránil

# Grave no. 39 / XXXV (Fig. 8)

**Find description**: Skeleton of about 50-year old female was found in a grave with the traces of a post construction. This grave also bore the traces of grave robbing. Votive offerings found in the grave included a flat tongue-shaped bronze fitting, a bronze ring, two keys, iron accretions, remnants of a knife, two bronze buckles of trapezoidal shape,



Fig. 9. Photography of burial equipment from female grave 39/XXXV (H1 43770 – 784, National Museum Prague). Photo L. Káchová.



Fig. 10. Mounting inv. no. H1 – 43 783 from grave no. 39/XXXV and textile fabric - linen - extant within. Photo G. Leite.

Inventory number	Binding	Torsion		Thickness of threads		Thread count		Colour	Material
		1s	2s	1s	2s	1s	2s	1s+2s	1s+2s
H1 - 43743	twill 2/2	Z	Z	0.3 - 0.9	0.9	9/8	11-13 / 10	unknown	unknown
H1 - 43529	twill (?)	Z	S	0.5-0.9	0.5-0.9	12/10	9 / 10	unknown	unknown
H1 – 43 783	tabby	Z	Z	0.66-0.84	0.58-0.85	9/7	15-16 / 10	unknown	unknown

Table 1: Table of textile fragments from graves from Záluží u Čelákovic - summary. Thickness of threads is in mm, median, 1s = first system of threads (probably warp), 2s = second system of threads (probably weft).

one sole-shaped silver fitting, small bead, bronze sheet, animal bones near both feet and two vessels. The set is deposited in the PNM under Inventory nos. H1-43 770-784<sup>13</sup> (Fig.9).

Objects with textile fragments: The bronze fragment of trapezoidal shape (Inventory no. H1-43 783) with the dimensions 21x 8mm (Fig. 10) inside which there was a loose piece decayed fabric<sup>14</sup>, was probably found in the south-west corner of the grave. This fragment was originally perhaps a fitting from a bag or a kind of satchel with the surface decorated with a series of etched circles. At present we do not have an analogous object found anywhere in the Czech Republic<sup>15</sup> or the surrounding countries so that a more precise identification of this object still remains a subject of discussions.

# Analysis of textile fragment:

Dimensions of the fabric preserved: 7 x 18 mm.

Binding: Tabby.

Torsion: Weak, Z in both cases.

Thickness of threads: Warp 0.66-0.84 mm, warp 0.58-0.85 mm.

Thread count: Warp – weft 9 threads in 7 mm (max. preserved width), warp 15-16 threads in 10 mm.

Colour: Rusty brown (due to the corrosion of iron and bronze), original colour unknown.

Material: Unknown (due to the strong corrosion).

## Summary

The fragments of textile fabrics that had been found were made using two types of binding – tabby or twill. In one fragment it was also possible to identify precisely the type of binding used – a 2/2 twill. In other fragment, given the state of preservation of the fabric imprints, the type of twill binding used could not be identified with any degree of precision. The quality of the textile fabrics made can be described as average rather than high. The types of binding used are typical for the Migration Period and there are many analogous finds either from Bohemia (e.g. the burial site in Prague–Podbaba<sup>16</sup>) or from the surrounding countries.

# Interpretation of textile fragments

For the objects found during archaeological research to be correctly interpreted it is essential to know the position in which they were deposited in the grave, that is, their position in relation to the body of the deceased. This applies especially to the objects that, due to their condition, cannot be clearly identified at the first sight. Because of their character, textile fragments particularly are this type of archaeological find. Small fragments, imprints and remnants affected by corrosion are most frequently the types of fabrics found in the given period. How can we then identify where these fragments come from and what was their primary function?

Basically, there are several generally acceptable theories that may be used. These apply specifically to the remnants of clothes or parts of the clothes worn by the deceased, the burial shrouds, casings for objects (e.g. knives, swords, brooches, etc.) or the lining of the coffin as well as votive offerings (clothes, folded fabrics) provided to the deceased as a gift.

In the literature dealing with burial rites in the Migration Period it is often mentioned that adhering remnants of fabrics are most frequently probably the remains of coverings for the dead, the so-called "shrouds", that is, a kind of wrappers for the dead which could be clasped together with brooches over the various parts of the dead body.

The term "shroud" is used to describe a fabric covering the dead body or the coffin, a fabric in which the dead body is wrapped before being deposited in the coffin or in the grave. It is also used to describe directly the burial dress itself (particularly in the modern age when the meaning of the word has changed).

According to B. Svoboda the textile wrappers often replace the coffin in the grave: "... of course, the clay had hardly ever fell directly on a dead body. Certain phenomena, especially the various distortions or minor irregularities (even where the pits are spacious enough the skeletons have their arms or legs tied closely together), suggest that corpses were wrapped up in linen or woven cloth that would than adhere to brooches or other metal objects deposited in the grave" The finds of brooches, which are not in pairs but individually deposited in a position not suggesting their function (clasping the clothes together), suggest a possibility

<sup>&</sup>lt;sup>13</sup> B. Svoboda, Čechy v době..., pp. 284, 286-287, 290.

<sup>14</sup> Ibidem.

<sup>15</sup> Thanks for interpretation belongs to Mgr. R. Korený.

<sup>&</sup>lt;sup>16</sup> K. Urbanová, Soubor textilních..., pp. 531-542.

<sup>&</sup>lt;sup>17</sup> B. Svoboda, Čechy v době..., pp. 284, 286 - 7, 129.

that they were placed in a position to clasp together a piece of fabric which may not necessarily had been a part of the clothing. This might then suggest a secondary use of the brooch which was to clasp together the above mentioned linen sheet or shroud in which the dead body was wrapped<sup>18</sup>.

However, there is no written or iconographic evidence from the given period to confirm this burial practice. But the absence of this type of evidence for this period of Protohistory, especially in the geographical area of the Czech Republic, is not unusual but more of a rule.

Then, how a burial shroud, taken to be a form of bandaging for a dead body, can be identified using archaeological evidence? Without the actual finds of fragments of bandaging, the conclusive evidence could be the positioning of skeletons - arms closely together or the chest or shoulders tied together with the apparent result being their deformation. In relation to the number of organic remains in the grave, which are manifested by the characteristic colouring of the surrounding soil, it can be assumed that the dead body was wrapped. This, however, necessitates close monitoring of the excavation process when opening a grave. Given that the research on the site in Záluží near Čelákovice was conducted in the 1930s and that we have no precise field drawings, apart from the sketches and brief field observation notes in J. Schránil's notebooks, this theory, which is referred to in the literature, is purely a subjective interpretation that unfortunately cannot be verified today.

The second possibility, which is quite often strongly supported, is that adhering fragments are the remnants of clothes or parts of the clothes worn by the deceased. But what clothes were given to the dead in the graves? A dress itself is basically a covering or an additional clothing of human body and it differs according to sex, culture or geographical regions. Its basic function is to provide warmth and protection for the human body, decorate it, make it more expressive and provide information about the person wearing it. Clothing as such is the most striking external sign of the person wearing it. It is related to the wearer's position in society and his/her personal style<sup>19</sup>. Can we assume that a burial dress was a dress normally worn in everyday life or was it a special type of dress designed specifically for burial purposes?

The third possibility, which is not less frequent, is to interpret textile fragments preserved on the metal objects as being basically casings for these objects. In the Migration Period there were two types of these casings – decorative or purely functional casings. The decorative casings include the casings made with great skill such as the casing (cingulum) for decorative studs from the Grave 160<sup>20</sup>

in Greding-Grosshöbing in Germany. The purely functional casings include the sheaths for daggers, knives or swords as well as the fabric wrappers to protect objects against wear or damage. There were, of course, the types of casings that were both decorative and purely functional.

In the case of the analysed fabrics from the skeleton graves from the site in Záluží near Čelákovice, it is today nearly impossible to determine their original function with 100% certainty. This is due, firstly, to the insufficient preservation of the textile fragments (not all of them being found during the review) and especially to the insufficient accompanying documentation which could provide guidance. It was therefore necessary to determine their basic function using the analogous finds and resourcefulness.

The iron stud (Inventory no. H1-43 529) from Grave no. 26/XXI., which was apparently found on the pelvis of the deceased person, was probably a part of the belt. Imprints of the fabric over nearly the whole area of the stud could have come from the clothes or other parts of clothing worn by the deceased person. The fact that the imprints were found on both sides of the stud indicates the folds of the cloth falling over the belt.

The iron fragments (Inventory no. H1-43 743), which were found in Grave no. 35/XXXI between the dead person's knees, could have been a fragment of a knife or a dagger. The fabric preserved on these fragments could have been a fragment of the casing, the lining of the sheath or the fabric wrapper in which the knife or dagger was wrapped before being deposited in the grave. For all these interpretations there are analogous finds and all of them are highly probable.

The small textile fragment, which was found loose inside the bronze fitting (Inventory no. H1-43 783) in Grave no. 39/XXXV could have been a remnant of a small fabric bag as indicated by the type of fabric used.

#### Conclusion

It was a part of the burial rite of the German (and not just the German) ethic groups to wrap the objects deposited in the graves in cloth or to put them in fabric bags. Rare fabrics were also given to the dead in the graves as votive offerings or they might have been used as shrouds. We come across these practices among German tribes living in the area of the present-day Czech Republic during the first four centuries A.D. as well as among the other tribes newly arriving in the area during the 5th and 6th century. The remnants of textile products, which we find in the context of graves, bare the traces of everyday life in a bygone age and the detailed study of these remnants allows identification of various types of use of textile fibres and the methods

<sup>&</sup>lt;sup>18</sup> J. Tejral, *Morava na sklonku antiky* (Moravia during Late Antiquity), Praha 1982, pp. 82 - 83.

<sup>&</sup>lt;sup>19</sup> K. Furmánek, K. Pieta, *Počátky odievania na Slovensku* (Beginings of Fashion in Slovakia), Bratislava 1985, pp. 9-10.

<sup>&</sup>lt;sup>20</sup> A. Bartel, Schutz - Verpackung oder Zier? Schutzvorrichtungen an metallen Trachtbestandteilen und Beigaben.

Beobachtungen - Befunde - Rekonstruktionen, [in:] Textilien aus Archäologie und Geschichte. Festschrift Klaus Tidow, eds. L. Bender Jorgensen, J. Banck-Burghess, A. Rast-Eicher, Neumünster 2003, pp. 132-141.

of textile production. At present we are often unable to tell with any kind of certainty whether these fragments are casing for objects which were deposited with the dead or the imprint of dead person's burial dress or shroud. Nonetheless, these finds help to increase the awareness and knowledge of the textile production in the period and to comprehend the importance of textile materials in the everyday life and within the society.

At the end it is to be hoped that the number of similar finds of the preserved textile fragments will continue to increase and that the systematic professional study and detailed analysis of these finds will provide a clearer picture of the textile production in the early Middle Ages in the area of the present-day Czech Republic.

#### **Sources of informations:**

Stock book No. 2. (1930 – 1959), Archive of Departement of Pre – and Protohistory PNM

Inventory book (Inv. No. 6b, Inv. No. 42740 - 47000), Archive of Departement of Pre – and Protohistory PNM

J. Schránil, *Field* diary (1930 - 31), without Inv. No., Archive of Department of Pre - and Protohistory PNM

K. Urbanová, *Zprávy z průzkumu textilních fragmentů z lokality Záluží u Čelákovic* (Rapport of technology research on textiles fragments from Zaluži near Čelakovice), without Inv. No., Archive of Departement of Pre – and Protohistory PNM, Praha 2008 – 2010.

# Streszczenie

Artykuł omawia znaczenie fragmentów tekstylnych znalezionych w czasie prac archeologicznych. Autorka skupia się na grupie pochówków szkieletowych z okresu wędrówek ludów na stanowisku w Záluží koło Čelákovic, w Czechach Środkowych. Na przykładzie przeglądu badań z pierwszej połowy XX wieku, artykuł ukazuje również problemy, przed którymi stają archeolodzy interpretujący

szczątki włókiennicze oraz korzystający z niewystarczającej dokumentacji badań. W artykule autorka wykorzystuje część badań finansowanych z grantu Uniwersytetu Karola w Pradze zatytułowanego "Strój i produkcja tekstylna na ziemiach czeskich w okresie rzymskim i w okresie wędrówek ludów". Do powstania pracy przyczyniły się również Fundacja Pro Archeologia Saxoniae i stypendium Gerharda Bersu.