RESEARCH ARTICLE – VÝZKUMNÝ ČLÁNEK

Archaeology of the main waste dump of the Sauersack/Rolava POW camp in the Ore Mountains (NW Bohemia)

Archeologie hlavní skládky odpadu zajateckého tábora Sauersack/Rolava v Krušných horách (SZ Čechy)

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The Sauersack/Rolava POW camp from World War II is the first archaeologically investigated site of its kind in Bohemia, and thanks to its highly authentic state of preservation it can be considered one of the best archaeologically known internment facilities in Europe. Nevertheless, new findings continue to emerge, including information from illegal treasure hunters. In 2022, the main settlement waste dump was identified and due to the threat to the site from illegal excavations, pre-emptive archaeological testing was immediately undertaken. The research has resulted in the documentation of a remarkable structure suited to waste disposal and the recovery of an assemblage of artefacts and ecofacts that complement and extend our knowledge of the communities that inhabited the POW camp.

World War II – forced labour – POW camp – settlement waste – Dark Modernities – Bohemia – ore mining

Zajatecký tábor Sauersack/Rolava z období druhé světové války je první archeologicky zkoumanou lokalitou svého druhu v České republice a zejména díky vysoce autentickému stavu zachování je možno jej pokládat za jedno z nejlépe archeologicky poznaných internačních zařízení v Evropě. Přesto i zde nadále dochází k získávání nových poznatků, například na základě informací pocházejících z prostředí nelegálních hledačů s detektory kovů. V roce 2022 se tak podařilo rozpoznat hlavní skládku sídlištního odpadu a vzhledem k ohrožení lokality nelegálními výkopy bylo obratem přistoupeno k preemptivnímu archeologickému výzkumu. Výsledkem je dokumentace pozoruhodné struktury sloužící k odstraňování odpadu a získání souboru artefaktů a ekofaktů, které doplňují a rozšiřují naše poznatky o komunitách obývajících zajatecký tábor.

druhá světová válka – nucená práce – zajatecký tábor – sídlištní odpad – Dark Modernities – Čechy – rudné hornictví

'*The actions of Napoleon and Alexander, on whose words the event seemed to hang, were as little voluntary as the actions of any soldier who was drawn into the campaign by lot or by conscription. This could not be otherwise, for in order that the will of Napoleon and Alexander (on whom the event seemed to depend) should be carried out, the concurrence of innumerable circumstances was needed without any one of which the event could not have taken place. It was necessary that millions of men in whose hands lay the real power – the soldiers who fired, or transported provisions and guns – should consent to carry out the will of these weak individuals, and should have been induced to do so by an infinite number of diverse and complex causes.*

L. N. Tolstoy, War and Peace (book IX, chapter 1, translation by Aylmer and Louise Maude)

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Introduction: People and things as actors in global conflict

When L. N. Tolstoy included in his epic *War and Peace* a general reflection on whether the role of the individual, without distinguishing his social position and thus 'place in history', is equal, he broke the thousand-year-old stranglehold on thinking and writing about the past. Naturally, even today it is possible to encounter approaches within history (including the historiography of modern conflict) based on the thematisation of heroic or demonic figures. His approach is often carried over – here in a truly distorting way – into the treatment of historical materiality. While in the case of Jean Moulin, Jan Kubiš and Reinhard Heydrich we can to a certain extent meaningfully consider their prominent role in history, in the case of the iconic blue scarf and hat on display in Les Invalides in Paris, the modified anti-tank No. 73 grenade, or the cabriolet Mercedes-Benz 320 B 'SS-3' damaged by an explosion, it is generally impossible to reach a deeper quality of insight than a certain form of adoring or fascinated fetishism. However, if we accept the inclusive conception of all, even marginal, figures in human history, which can be traced back to Tolstoy, and if we apply the symmetrical principle of the study of (historical) materiality (essentially *Shanks 2007*; *Witmore 2007*; *2014*; *Pauknerová 2014*), we can easily arrive at the theoretical reflection that just as there are no banal human participants in history, none of the material actors can be considered irrelevant. The impression of banality is nonetheless created here by the absence of an obvious line to a section of the historical narrative.[1]

A safe (and perhaps the only possible) solution is the formulation of separate discourses, semi-independent of the historical master narrative, within which the study of certain sections of historical materiality takes on clearly defined meanings. As a model, we can mention art history, individual regional schools of medieval archaeology, or the discourse of the so-called *Dark Modernities* in the archaeology of the 20th century. Within this framework, the archaeology of internment and persecution facilities and the archaeology of forced labour was established and already adopted within Czech archaeology. One of the key findings of this research is the recognition that it was the sum of material and human actors removed from their original contexts and meanings that constituted the reality of life behind barbed wire.

The Sauersack World War II labour camp (today Rolava, Sokolov district) in NW Bohemia was the first archaeologically investigated internment camp in Bohemia (the first site of this type investigated in the Czech Republic was the Roma concentration camp in Hodonín u Kunštátu in Moravia; *Kos 2013*). The camp was built mainly for Soviet and French POWs from Arbeitkommandos des StALAG XIIIB and was an integral part of the industrial complex of a mining and tin processing plant, the construction of which began in 1941 (*Fig. 1*). In the last decade, it has become the object of systematic multidisciplinary research and one of the key sites of 20th-century archaeology in the Czech Republic (*Rojík 2000*, esp. 100–105; *Weber 2001*; *Hasil et al. 2015*). An integral part of this industrial facility was the labour camp, designed in 1940 using the model of the Roman military

[1] Narrative as the predominant mode of communication about the past has been characterised by *Vašíček* (*2006*). The implications of this fact in the field of historical archaeology are analysed by *Hasil* and *Novák* (*2020*) using the example of the residences of medieval elites.

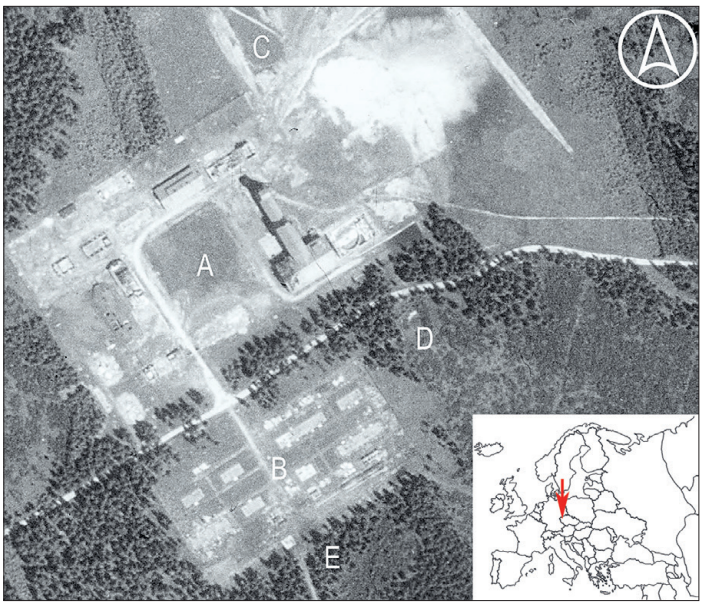


Fig. 1. Sauersack/Rolava. Historical orthophoto of the deserted mining and processing plant and dismantled POW camp (1953, source: Military Geographical and Hydrometeorological Office of the CR, LMSA08.1953. KRAS54.03365). A – mining and processing plant; B – POW camp; C – spoil tip; D – mine sinkhole from 1942, later used as landfill; E – position of another landfill of the POW camp tested by excavation in 2019.

Castra by Berlin architects C. Th. Brodführer and F. Krefter, both of whom took part in the German archaeological expeditions to the Near East (*Vařeka et al. 2023*, 43–51). In 1941, the site of Sauersack temporarily housed the administration of the constructed mining plant and Italian concrete workers were quartered here. The first contingent of prisoners of war arrived this same year (239 French and Soviet prisoners). Their number grew during the war and was further supplemented by marginal numbers of other nationalities (Czechs, Greeks, Dutch, Belgians – according to *Rojík 2000*, Tab. p. 100). Due to the increase in the number of inhabitants, the camp was expanded during the war (*Hasil et al. 2015*, Fig. 8: 9) and the development was expanded by buildings that were clearly of a lower quality standard than the original buildings. The camp was evacuated at the end of April 1945. It was not used again after the war and the prefabricated houses were sold to Czechoslovak Railways as warehouses (*Hasil et al. 2015*. esp. 198–199). Since then, the abandoned site has undergone natural transformations without any significant non-authentic interventions.

2022 research campaign: the main landfill of the POW camp

Research aims, issues, and methods

An important output of the systematic topographic survey of the defunct industrial complex carried out in 2013–2017, which was based on field survey, the study of historical plans, and the use of airborne laser scanning data, was the identification of several landfills of settlement waste. They can be hypothetically assigned to the residential areas of the various communities that were housed within the industrial complex. On one side of the spectrum, we can anticipate civilian mining specialists and camp administrative

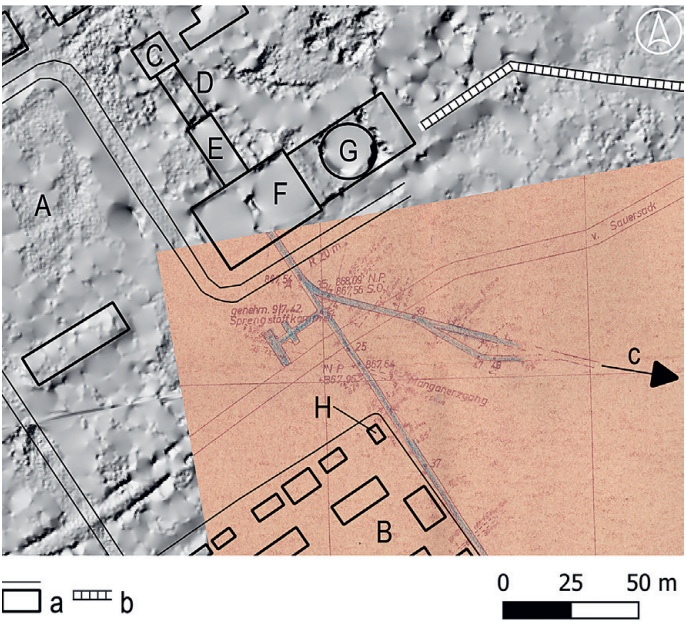


Fig. 2. Sauersack/Rolava. Area of the mine sinkhole east of the POW camp at the German mine plant created shortly before the accident (second half of 1942). A – tin mining and processing plant (Facility No. 1); B – POW camp; C – headframe; D – ore mine; E – ore magazine; F – ore treatment; G – sludge thickener; H – presumed guardhouse (Building No. 7); a – surface buildings and linear structures of the industrial area and POW camp; b – narrow-gauge rail for ore transport connecting Facility No. 1 and Facility No. 2 on the surface; c – planned underground interconnection of Facility No. 1 and Facility No. 2 at a depth of 60 m.

staff accompanied by their families as well as the well-supplied, barracks-style living community that was later identified as (mostly?) French or Francophone POWs. On the other side, there was the poorly supplied community of others, especially Soviet prisoners. Archaeological testing of these dumps was the subject of a 2019 research campaign (*Hasil et al. 2021*; *Hasil et al. 2023*, 50–53).

However, during site reconnaissance, another waste dump was overlooked, which was even connected by a specially constructed narrow-gauge railway with the POW camp. Due to its technical design and the estimated volume of waste deposited, it can be described as the likely main dumping ground for the waste produced by the inhabitants of the internment facility. The feature was omitted from previous surveys because it was not part of the originally projected components of the camp, but an unintentional mine sinkhole was re-used as a dump site. This sinkhole appeared in late 1942 / early 1943 because of intense mining activity 60 m east of the northeast corner of the POW camp. The research team obtained information about the existence of a sunken feature containing WWII artefacts indirectly from unauthorised prospectors with metal detectors, according to whom there were to be finds of militaria – an early (German?) type of Stahlhelm and allegedly even a magazine of a German submachine gun around the mine sinkhole. This substantial information generated the need for a field excavation for two reasons. From the perspective of cultural research management, it was the rescue of at least a sample of research data clearly threatened by illegal activities. From an academic point of view, it was desirable to verify the information about the discovery of the militaria, since in the several thousand artefacts from the 2019 campaign, not even one (*sic*) could be categorised as military material. The excavation in the 2022 campaign thus addressed the question of which community or communities produced the waste deposited in the sinkhole (the search for material

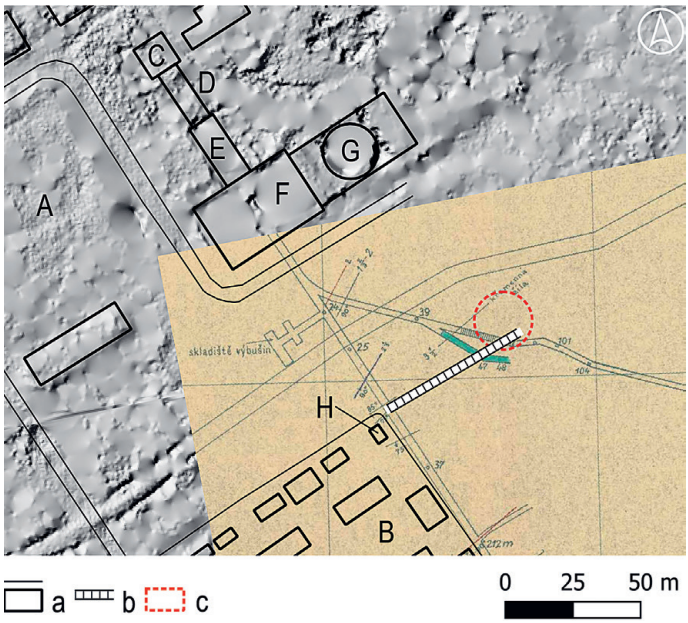


Fig. 3. Sauersack/Rolava. Area of the mine sinkhole east of the POW camp at the postwar mine plant (early 1950s). A – tin mining and processing plant (Facility No. 1); B – POW camp; C – headframe; D – ore mine; E – ore magazine; F – ore treatment; G – sludge thickener; H – presumed guardhouse (Building No. 7); a – surface buildings and linear structures of the industrial area and POW camp; b – narrow-gauge rail for transport of waste into the sinkhole; c – mine sinkhole.

traces of a Wehrmacht guard that had previously remained archaeologically invisible was crucial), to explore an unusually designed and clearly very large waste area, and to place the new data in the context of the previous results. The method chosen, i.e. manual selection and partial sieving of a sample of deposited waste in volume of c. 1 m^3 was therefore fully in line with the 2019 campaign. Only the archaeobotanical evaluation, which would provide rather predictable information about the surrounding environment identical to the present one and the presence of ruderal plant species (*Hasil et al. 2021*, esp. Table 5), was omitted. Instead, a pre-emptive detector prospection of the entire surface of the landfill was undertaken.

Archaeological features

Mine sinkhole

The archaeological feature investigated in 2022 emerged in direct connection with the start of mining at Sauersack/Rolava, which is dated to August 1, 1942 (*Hasil et al. 2015*, 181; cf. *Weber 2001*, 2). The mine map from November 5, 1942, (*Fig. 2*) shows that a pair of parallel horizontal mine workings at the 60 m level was intended to be built in the area of the future mine sinkhole. The first working was connected with Facility No. 2, which should have served for the underground transport of mined material by carts (in the early days of mine operation provided by a surface narrow-gauge railway, *Fig. 2*: b), transport of men, ventilation, and dewatering. The second of the parallel tunnels with a total length of 60 m was to serve as an underground switching station; hypothetically its function could be related to the nearby explosives store. However, as seen on the post-war mining map (*Fig. 3*), which shows the final extent of the tunnels at the 60 m level, the 1942 project

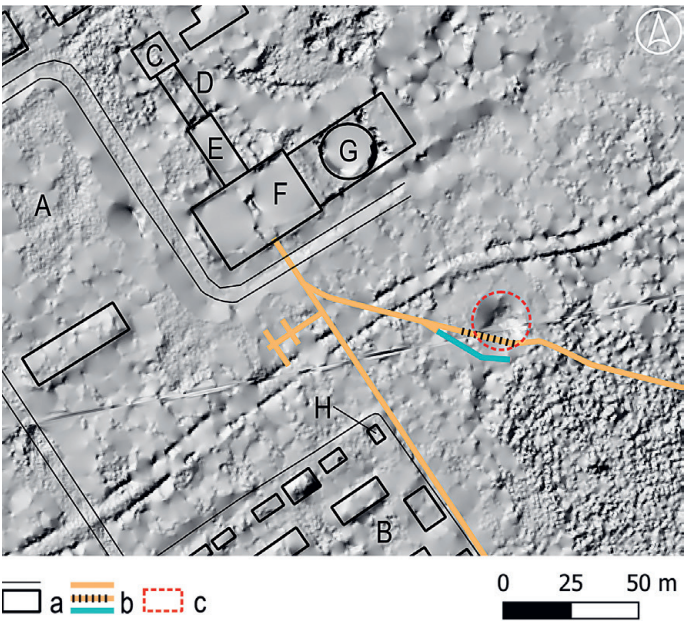


Fig. 4. Sauersack/Rolava. Area of the mine sinkhole east of the POW camp in the contemporary DEM (DMR 5G background data provided by ČÚZK). A – tin mining and processing plant (Facility No. 1); B – POW camp; C – headframe; D – ore mine; E – ore magazine; F – ore treatment; G – sludge thickener; H – presumed guardhouse (Building No. 7); a – surface buildings and linear structures of the industrial area and POW camp; b – mine adit, bricked-up adit, inaccessible adit; c – mine sinkhole.

obviously could not have been completed because of the presence of a geological anomaly (manganite vein) at the location of the proposed parallel tunnels. This anomaly was probably the reason for the collapse during the construction of the parallel galleries. The mine designers responded to the new situation by abandoning the vision of the parallel switching line, the unfinished section of which remained inaccessible (presumably collapsed), and by constructing reinforcement (presumably by bricking) in the threatened section of the interconnection of Facilities No. 1 and No. 2 (*Fig. 4*: b). Their courses were also slightly corrected.

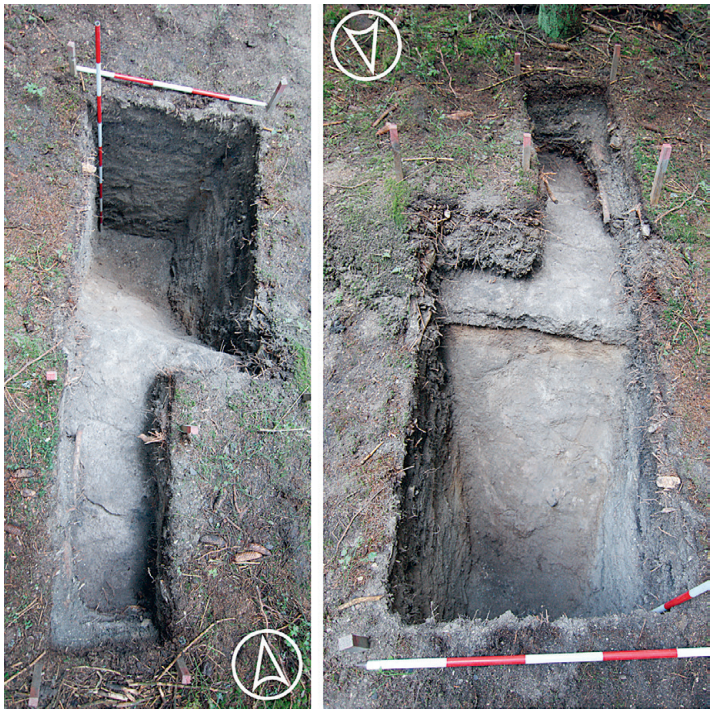
The mine sinkhole was manifested on the surface by a funnel-shaped depression with a diameter of 20 m and a depth of at least 5.5 m (*Fig. 5*). It is located immediately above the planned parallel tunnels (the negligible offset is probably caused by the inclination of the geological layers, *Fig. 4*: c). Since the underground connection between Facility No. 1 and Facility No. 2 was put into operation in 1943, this geological event can be dated precisely to the turn of 1942 and 1943.

Waste dump

Roughly at the same time (mid-1943), a significant increase in the number of interned forced labourers began (*Rojík 2000*, Tab. on p. 100), which was archaeologically indicated by the extension of the POW camp to the south (*Hasil et al. 2015*, esp. obr. 8: 9) and the continuous development of accommodation buildings, auxiliary structures, and facilities. The higher number of inhabitants in the POW camp (prisoners and consequently the guards) was undoubtedly reflected in the increased need for the deposition of generated settlement waste. The use of a large mine sinkhole situated 50 m from the northeast corner of the camp seemed to be an ingenious solution. On a general level, this is a remarkable

Fig. 5. Sauersack/Rolava. The mine sinkhole east of the POW camp, seen from the northeast. The red arrow points to the location of the test trench from autumn 2022 (photo by J. Hasil).

Fig. 6. Sauersack/Rolava. Test trench on the southern edge of the mine sinkhole (autumn 2022, photo by J. Hasil).



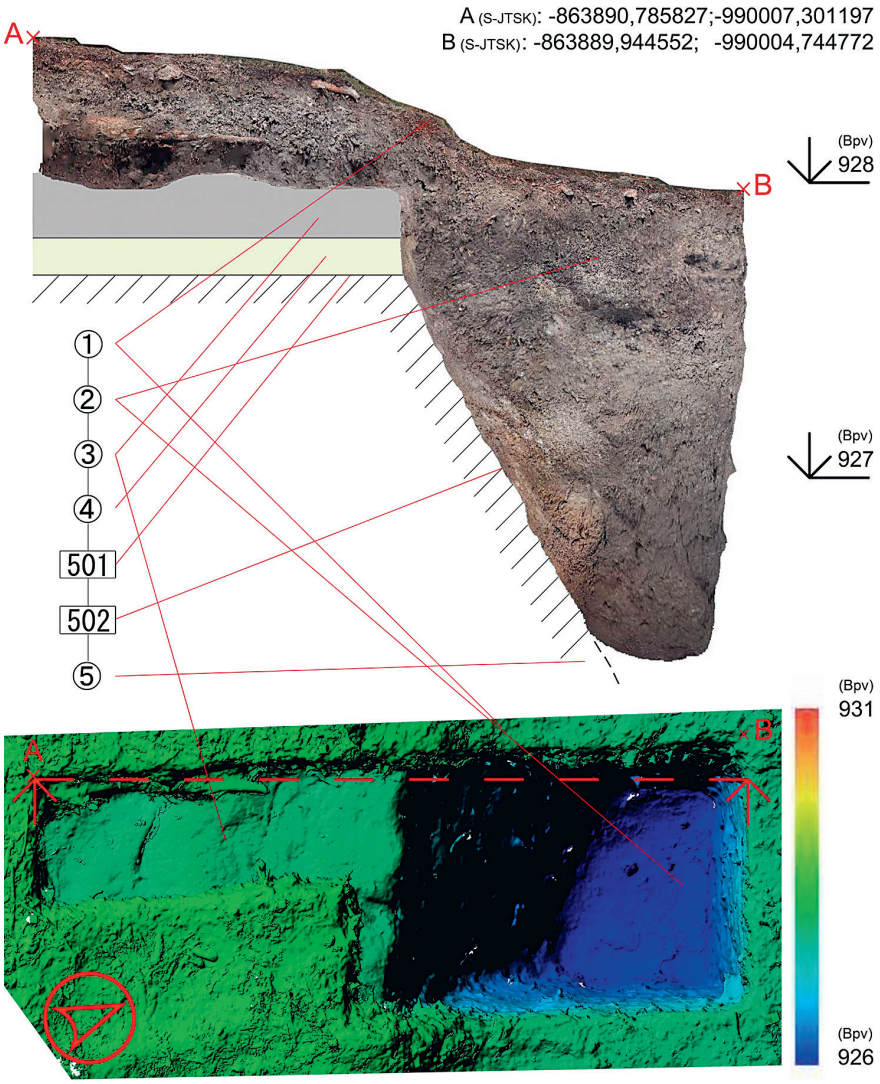


Fig. 7. Sauersack/Rolava. Test trench on the southern edge of the mine sinkhole. Layers: 1 – forest soil; 2 – landfill of settlement waste; 3 – concrete platform for the narrow-gauge railway; 4 – sandy subbase; 5 – subsoil. Features: 501 – cut-off for concrete foundation; 502 – mine sinkhole (autumn 2022, photogrammetry by P. Hasil).

chain of interactions between humans and the environment (initiation of mining), the environment and humans (mine accident), humans and the environment again (reutilisation of the sinkhole as a dump), and finally the environment to humans (natural archaeological transformation of the abandoned landfill).

After surface recognition of the sinkhole/landfill, it was obvious that waste was deposited here from a single point, creating a stratigraphically younger, conical formation in the funnel-shaped sinkhole – a waste mound. On this highest point of the waste cone,

Fig. 8. Sauersack/Rolava. The body of the narrow-gauge railway seen from the mine sinkhole/waste dump, i.e., from the east (photo by J. Hasil). A – surface edge of the northeastern corner of the POW camp; B – body of the railway; C – characteristic railroad spikes collected on the body of the railway (photo by I. Hrušková).

a small test pit measuring 1×1 m was dug. Subsequently, it was extended in the southern direction (*Fig. 6*), after it became apparent that the edge of the mine sinkhole had been artificially reinforced with a concrete platform, thus explaining why waste was dumped into the pit from a single point. The stratigraphic situation in the trench was trivial and consistent with the initial hypotheses (see *Fig. 7*).

Relic of narrow-gauge railway

The concrete platform indicates that the use of the mine sinkhole as a landfill was not spontaneous, and the foundations are clear material evidence of intentional and organised activity. A relatively faint and indistinctive (cf. *Fig. 3: b* and *Fig. 4*) linear concave feature linking the reinforced rim of the mine sinkhole to the northeast corner of the POW camp (*Fig. 8*: B) helped clarify their purpose. The structure has been hypothetically interpreted (based on analogies from other parts of the industrial site) as the embankment of a narrow-gauge railway. This hypothesis was subsequently supported by the recovery of a trio of typical rail spikes from the surface of the concave feature using a metal detector (*Fig. 8*: C).

The existence of a narrow-gauge railway between the POW camp and the mine sinkhole/waste dump retrospectively helped refine the interpretation of the excavated concrete platform. Most probably, it was used for the installation of a tipping device for mine carts (cf. *Fig. 9*).

Fig. 9. A – Sauersack/Rolava. Mining carts on the ramp south of the processing plant. The design of this type allows the hull to swivel and the load to be discharged to both sides (*StA Sachsen, BA Freiberg*, Best. StB, Nr. 3-2847); B – analogy to swivel tipper (photo by A. Schwarz, source https://hellertal.startbilder.de); C – mining cart, one of the types used according to written evidence at the Rolava mining plant (source https://www.vvm-museumsbahn.de/ix/ix-start/ix-start.php?id=12&env=au&pname=/fz/C6/C64-Muldenk/C683-16/120916-IMG_2243-w1200m.jpg&pwidth=1200).

Presumed guard house

The existence of the landfill and associated narrow-gauge railway is not reflected in any known archival plan of the POW camp. Thus, it remains unclear how the internal area of the camp was connected to the rail embankment. Even detailed surface reconnaissance of the area of the northeast corner of the fenced site failed to reveal any evidence of the existence of a gate (*Fig. 8*: A). It is conceivable that there may not have been direct access to the track bed from the camp area and waste was dumped into the mine carts over the camp enclosure.

Considering this question and the alleged discovery of militaria, a regular rectangular surface relic of a house measuring 4 × 6.5 m in the northeast corner of the camp is remark-

Fig. 10. Sauersack/Rolava. Relics of presumed guardhouse in the northeast corner of the POW camp (Building No. 7, after *Hasil et al. 2015*, 188). A – view from the south; B – detail of the northwest corner of Building No. 7 showing the remains of roofing material (terry paper) and water supply connection (red arrow) (photo by J. Hasil).

able (*Fig. 10*; *Hasil et al. 2015*, 188, Building No. 7). According to the building plan of the camp dated June 2, 1942 (*SOA Plzeň*, *CDR*, box 11), this area was to be the location of a guard post. We have so far considered this functional interpretation of the building rather less likely, as its construction standard was clearly very low (absence of a concrete foundation, no evidence of a heating system, roofing with tar paper). The building was considered rather as some kind of technical facility (evidence of water supply pipe in the building, see *Fig. 10*: B). However, the discovery of the narrow-gauge railway, which must necessarily affect the level of security of the camp perimeter (a gate or platform for throwing waste over the fencing), brings the original interpretation back into play. Namely, the narrow-gauge railway, which was built later than Building No. 7, was intentionally located at the site of the presumed guardhouse.

Artefacts

By manual selection under partial sieving, approximately 1.25 m^3 of accumulated settlement waste was excavated. As explained above, it was deposited intensively, based on established rules for the disposal of waste from the settlement used by groups of prisoners and guards (cf. *Fig. 11*). The formation of settlement waste represents a complex process of transformation that allows archaeology to consider the social identities of its producers (*Květina – Řídký 2017*). In the specific case of the Rolava POW camp, a system of hypotheses and research questions can be based on prior archaeological knowledge (the results of the 2019 field research, which distinguished the settlement waste of two differently supplied communities), as well as knowledge obtained from written, i.e., non-archaeological evidence. According to the municipal chronicle of the village of Vysoká Pec, we know that while the POWs – naturally – resided in the POW camp, the Wehrmacht guards were quartered outside the camp area, which probably narrows considerably the spectrum of settlement activities that can be manifested in the local waste. An important aspect is also the disproportion in the numbers of both groups.

	POW Camp				Facility No. 3		Facility No. 1: loging of specialists
	southern landfill (excavated 2019)		northeast landfill (excavated 2022)		(excavated 2019)		(surface collection 2019)
	surface collection	stratified finds	surface collection	stratified finds	surface collection	stratified finds	surface collection
artefacts/ecofacts [g]							
container glass	100	252	0	439	3793	5502	
table glass	0	10	0	62	269	563	
table porcelain	0	293	0	37	2890	1589	
metal can	40	100	0	0	115	12190	
animal bones	3	60	0	121	882	1602	
artefacts (not quantifiable)							
militaria			Stahlhelm (?), magazine of submachine gun (?)				
tools				grinding disk			
personal items	comb (fragment); parts of shoes	razor; parts of shoes; soft textile		severs (2x), spoon (2x), fork, mirror, parts of shoes; textile	clasp-knife; parts of shoes; soft textile	domino tile (ivory); fragments of zip with slider; fragments of textile; plastic buttons	
building material	building ceramic; plate glass; tar paper; fasteners	building ceramic; plate glass; tar paper; fasteners; wiring material		building ceramic, fasteners, table glas, components of electroinstalation, metal components of buildings, wire	bricks; tiles; plate glass; wiring material; bulding fittings; fasteners	bricks; plate glass; wiring material; bulding fittings; fasteners; rebar; mortar with issolation imprints	slate rooftile
plastic	rubber gasket	rubber hose; fragment of cellophane		rubber	rubber hose	rubber hose	
other metal objects		aluminium foil; enamelled vessel; galvanic cell; tube of toothpaste		enamelled pot	iron ball (diameter cca 4 cm – for pétanque?); components of iron stove	enamelled vessels; metal boxes for cosmetic/medicament; tubes for cosmetic/medicament; aluminium foil	fastening component of wooden headframe construction

Tab. 1. Characteristics and summarisation of finds.

Fig. 11. Trash can lid illegally excavated and dumped on POW camp site (2023, photo by M. Pavlíková).

The basic categories of finds were compared with the results of the 2019 campaign (*Tab. 1*; *Fig. 12*). It is obvious that the settlement waste in the northeast landfill excavated during the 2022 campaign stands much closer in characteristics to the settlement waste linked with the Soviet POW community in the southern landfill while differing significantly from the waste recorded at Facility No. 3.

The absence of metal cans is notable, although this fact is not easy to interpret. A direct explanation could be that the inhabitants of the POW camp were practically not supplied with commodities for which this type of packaging was used. This interpretation is unlikely, however, as it would be based on the long-obsolete assumption that settlement waste directly reflects settlement activities without further transformation (cf. *Binford 1981*). A much more likely explanation is that the metal cans in the POW camp were subject to a system of selection and separate treatment. Its organisers could have been the camp administration (collecting the secondary raw material), but also the prisoners themselves, as the memoir literature mentions a variety of ways in which the involuntary residents of the internment facilities reused these containers (for example, making improvised heating and cooking devices or even ventilating escape tunnels).[2]

There is also congruence between the two landfills at the POW camp in the case of another important packaging material – glass. Again, there is a significantly lower share compared to the community stationed at Facility No. 3, where the high representation of glass packages is caused particularly by non-returnable alcoholic beverage bottles. Depending on container volume, the disposal pattern for glass packaging appears to be the same in both landfills of the POW camp. If we observe the degree of fragmentation of individual containers according to their volume, we find that the trend already evident in the data from the 2019 research campaign is confirmed (see *Hasil et al. 2021*, Tab. 2).

[2] The manufacturing of stove and kitchen equipment from empty cans in Miranda de Ebro, the internment facility in the fascist Spanish, in 1942 was described by the Czechoslovak air officer *František Fajtl* (*1991*, 146, 152). The use of cans for the construction of the ventilation of the escape tunnel was recalled by another Czechoslovak airman Ivo Tonder (*Tonder – Sitenský 1997*, 68), a participant of the so-called Great Escape from Stalag Luft III in Zagan in March 1944 (cf. *Pringle et al. 2007*).

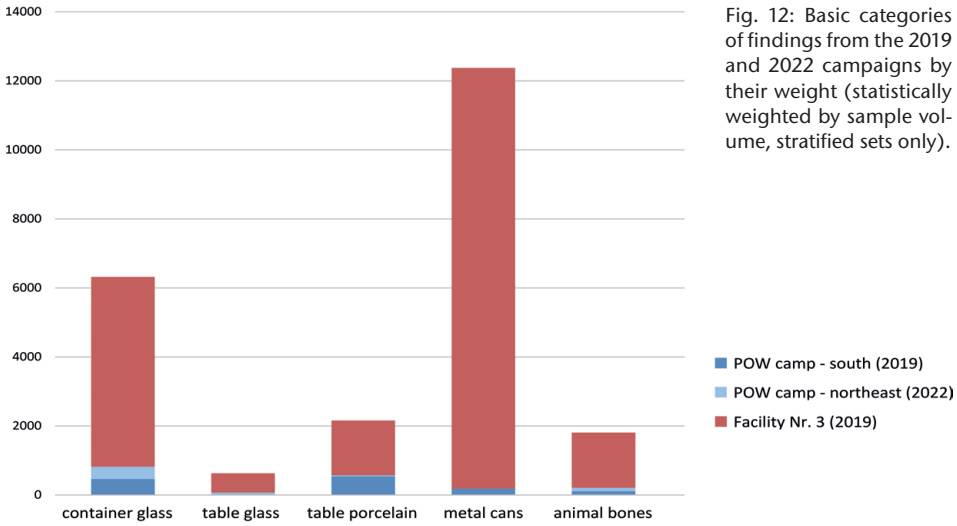


Fig. 12: Basic categories of findings from the 2019 and 2022 campaigns by their weight (statistically weighted by sample volume, stratified sets only).

The community inhabiting the POW camp discarded glass containers of higher volumes (above 250 ml) exclusively in a highly fragmented form.

To determine the fragmentation of glass and porcelain vessels, the analysis used the so-called Dimension Ratio Model (DRM, *Hasil et al. 2021*, esp. Table 2; *Hasil – Pilař in print*), which was previously developed by our team. Unlike the Fragmentation Index (FI, *Květina 2005*; *Kuna 2015*), which works with an estimate of the number of individuals based on sherd thickness, the DMR determines categories of vessel damage, which is a more efficient and rapid procedure in the case of type-uniform modern assemblages (category I: undamaged vessels or vessels on which three major dimensions can be measured; category II: vessels on which two major dimensions can be measured, excluding bottom; category III: vessels on which one major dimension can be measured including bottom; category IV: most fragmented material). Finally, DRM can also be determined for other categories of objects (building ceramics, fillings of building openings) even on the basis of mere photographs of the material. This is useful in the case of modern assemblages, as particularly the larger artefacts had to be shredded on-site.

Thus, we can hypothesise that there was usually some form of secondary use for the glass packaging, or that secondary material collection was again practised. The only undamaged (or minimally damaged DRM category I) packaging that was discarded is small-volume pharmaceutical and cosmetic products for which there was no use or which offered only a small amount of recyclable material. This principle was fully confirmed in the find spectrum of the 2022 campaign, as only a *Thymodrosin* medicine bottle and a narrow glass pill tube came into the sampled settlement waste without damage due to the consumption of their contents (*Fig. 14*). On the contrary, at Facility No. 3, undamaged (or with 'perimortem' damage, which could have occurred after deposition or even during excavation) wine bottles of common volumes around 750 ml were most often discarded (*Hasil et al. 2021*, Table 2), as well as wide spectrum of glass containers for food.

The low representation of fragments of various types of table glass and porcelain points to one of the possible schemes of providing the internment community with dining equip-

Fig. 13. Sauersack/Rolava. Trademarks: A – ewer from the production of the První českobudějovická továrna na smaltované nádobí; B – detail of the mark; C – mark of the První českobudějovická továrna na smaltované nádobí (after *Vondra n. d.*); D – bottle of Tymodrosin (photo by I. Hrušková).

Fig. 14. Sauersack/Rolava. Packaging of medicinal products recovered during the 2019 and 2022 campaigns at the landfills of POW camp and Facility No. 3. The high representation of products of French origin is notable (photo by I. Hrušková).

ment, which in the case of the POW camp was made of metal or enamel. It is often imperceptible in the archaeological record, as objects of this type are not subject to normal damage or deterioration (see *Fig. 13*: a). Also, this factor is identical to the image of settlement waste collected in 2019 and 2022 in the context of the POW camp. On the contrary, the community inhabiting Facility No. 3 was equipped with large batches of identical

types of table glass and porcelain, and both ways of shaping the settlement's waste point to the barracks life of the community that produced it. The same provisioning conditions are known, e.g. from the work camp in Prague at Letná on the site of the J. V. Stalin monument (early 1950s), where the inhabitants were supplied with large sets of identical table porcelain and glass types (*Hasil et al. 2022*, 21–24). Another model of the 'provisioning' of the internment community is represented by a set of drinking tableware from the Roma and Sinti concentration camp at Lety u Písku (South Bohemia), where no identical types were found among several dozen mugs (*Vařeka et al. 2022*, 64–109), demonstrating that the internees used equipment they brought from their households.

The interpretation of finds that cannot be statistically grasped due to their singularity or partiality is difficult. In practice, these objects (parts of repaired or newly constructed buildings, personal objects such as cutlery or ewers, scraps of textiles and parts of shoes, a fragment of a mirror, etc.) can be regarded as random evidence of everyday camp life, for which, unfortunately, it is not possible to reconstruct the transformative processes they underwent before entering the context of intentionally collected and deposited settlement waste. It is remarkable that among the finds documented by regular archaeological excavation, militaria are still absent. Only a part of an ewer of the Austro-Hungarian model, but in a post-war, probably civilian enamelled version (*Fig. 13*: a) was recognised as military material. Alleged finds of militaria reportedly made by unauthorised metal detectorists from the investigated dump could not be linked to other objects whose find situation would have been indisputable. This is a significant loss, since with knowledge of the details, it would have been possible to decide whether the finds were from the inside of the dump, i.e. from the period of the camp's operation, or rather from its surface, which would have argued for their deposition in the final days of the war or even in the post-war period, when it is easy to imagine that the practice of selecting artefacts to be taken out of use had radically changed.

Provenance of artefacts

Only two artefacts with an identifiable manufacturer's trademark come from the 2022 research campaign. The everyday objects are represented by the top part of an enamelled ewer, which can be identified as a product of the *První českobudějovická továrna na smaltované nádobí* (*First Enamelware Factory in České Budějovice*) according to the blue lion logo on the bottom (*Fig. 13*: a, *Vondra n. d.*). The type of the ewer is derived from the Austro-Hungarian army model known as M.1899. The blue-grey enamelling could not be dated more closely and it remains unclear whether it is a product for the civilian market or a series intended for the army.

The find of a *Thymodrosin* medicinal syrup bottle (*Fig. 13*: d) is notable because it enlarges the already-known spectrum of drug packaging. *Thymodrosin* is an expectorant used for a range of respiratory ailments, from cough to bronchitis, whooping cough and pneumonia. The drug was initially manufactured by pharmacist Otto Schröder in Göppingen, later by the *Thymodrosin-Gesellschaft* in Bad Godesberg am Rhein (now a district of Bonn, Germany). An identical type of packaging is in the collections of the *Deutsches Hygiene Museum* in Dresden (Inventarnummer DHMD 2020/185 – *Die Sammlung des Deutschen Hygiene-Museums Dresden 2023*). The excavated artefact is missing the Bakelite cap of Boehringer Ingelheim found on the Dresden specimen.

A larger number of drug containers were recovered from previous campaigns at POW camp and Facility No. 3, but only three of them could be identified in more detail (*Tab. 2*). It is noteworthy that all these identified medicines were manufactured in France. A round-bottomed reddish-yellow tin jar with the name *Formocarbine Naphtolee* contained charcoal granules. It was made famous by the *Laboratoire de Medicine Experimentale Georges Tetard* in Beuvais, north of Paris. The product has been manufactured since 1925 and was intended for the treatment of gastrointestinal infections (*Frogerais 2019*). A similar indication can be noted for *Lysarthrol*, produced by the *Laboratoires du Docteur Roussel* in Paris (*Vidal 1935*, 975). Nevertheless, the most notorious substance used in the POW camp community was undoubtedly *Pipérazine*. It was developed as a psychic and sexual stimulant and was produced and promoted as a gout remedy by the Parisian pharmacist Léon Midy (1847–1928). By the 1940s, however, *Pipérazine* was already obsolete in this role, and a similar designation is unlikely even in the POW camp context. In this case, the much more likely is the deployment of *Pipérazine* as an antiparasitic, since its composition paralyses the locomotor system of worms, which then leave the human digestive tract alive (*Museum Sybodo* n.d.). The preponderance (albeit statistically inconclusive) of French preparations can be hypothesised as evidence of the supply of Red Cross packets to the community at the Sauersack mine site. The indication of the recognised preparations then gives insight into the nature of the internees' health problems: indigestion, respiratory problems, and parasites.

Excursion: Recollections of eyewitness Franz Achtner and the medical practices at the POW camp

The most comprehensive memoir of the living conditions at the Sauersack/Rolava POW camp was written by Franz Achtner, who worked there as a payroll accountant in the early years of the mine (*Achtner 2004*). Although his contribution is only limited to a few printed pages and lacks any internal structure, the two passages from the memoir makes it possible to link the historical narrative with the relatively numerous finds of medicine containers.

In the first case, *Achtner* (*2004*, 38) remembers the commander of the Wehrmacht guard: '*The Wehrmacht officer was already a unique individual. In his civilian profession, he was a dentist and he took pleasure in performing dental treatments. And his business was booming! For his "praxis" he had various pliers at the ready and even a sealing device, which he had to kick like a spinning wheel, however – what for a nostalgic joke! With the drill he fiddled around in the patient's mouth and with his right foot he tapped the flywheel so that the drill reached the correct speed. He mainly treated his French prisoners or his Wehrmacht corporals who were assigned to him to "guard" the French. But from time to time, a private person strayed into his "practice", because it was a long way to a dentist in Neudek, and the "company dentist" was much closer and more convenient.*'

Further on in his text, *Achtner* (*2004*, 39) mentions the activity of a doctor from the POW circle: '*(…) Russian prisoners of war also came to the mine in 1942. Among them was the Belarussian Dr. med. Viktor Suska, who looked after the health of his fellow prisoners. But he was also often called to the sick inhabitants of the surrounding villages to provide medical treatment, and in a very short time he was the darling and blessing of the Frühbusser and Sauersacker area. (…) It may have looked strange when this highly*

area	campaign	item	number	country	city	brand	produced
POW Camp	2019	galvanic cell	1	Germany?	?	?	?
POW Camp	2019	shaving gel	1	France	Paris of Montreuil	Vibert Fréres	?
POW Camp	2019	jar of body créme	1	Germany	Hamburg	NIVEA	after 1925
POW Camp	2022	bottle of Thymolin	1	Germany/ Czechoslovakia	Prague/Ústí nad Labem	Thymolin D.R.G.M.	1920's–1940's
POW Camp	2022	Mess kit	1	Austria-Hungary/ Czechoslovakia	České Budějovice	První českobudějovická továrna na smaltované plechové nádobí, s. r. o.	1910–1930s
Facility No. 3	2019	porcelain bowl	3	Denmark	Copenhagen	Kobenhavns Porcellains Maleri	after 1924
Facility No. 3	2019	porcelain flat plate	1	Germany/ Czechoslovakia	Chodov*	Haas & Czjzek	1920's–1960's
Facility No. 3	2019	bottle of Becherovka-liqueur	1	Germany/ Czechoslovakia	Karlovy Vary*	Johannes/Jan Becher	1920's–1940's
Facility No. 3	2019	bottle of spirit solution	1	Germany/ Czechoslovakia	Brno	ALPA	after 1930
Facility No. 3	2019	tube of toothpaste	1	Germany	Mainz or Gera	BLENDAX	after 1932
Facility No. 3	2019	alumnium cap of dehydrated milk	1	France	?	Grande compagnie latiére industrielle de Normandie	?
Facility No. 3	2019	aluminium cap of malt flour	1	France	Paris	Pouillard et Fils, Docteurs en medicine et pharmaciens	?
Facility No. 3	2019	metal dose of Formocambine	1	France	Beauvais	Laboratoire de medicine expéri-mentale (G. Têtard), S. A. R. L.	1920's–1960's
Facility No. 3	2019	bottle with gram/spoon scale	1	France	?	?	?
Facility No. 3	2019	bottle of Piperazine (drug)	1	France	Paris	Léon Midy et Fils	1910s–1950s
Facility No. 3	2019	electrical fuse	1	Germany	?	Träga	?
Facility No. 3	2019	fragment of printed paper (found in dose of digestive agent)	1	France?	?	?	?
Facility No. 3	2021	metal dose of Lysarthrol	1	France	Paris	Laboratoires du Docteur Roussel	since 1930s

Tab. 2. Provenance of artefacts. * regional product.

revered doctor, trained with above-average knowledge, was accompanied to the patients by a Wehrmacht corporal with an overhanging carbine. What might have been going on in the mind of the German corporal and in the mind of the Russian doctor? God knows, those were devastating times. We were so young then and people didn't take it so hard.'

The evidence of Asklepios followers working during WWII at the Sauersack/Rolava mining and processing plant could be hypothetically expanded by archaeology through finds from Facility No. 3 (1.3 km west of Facility No. 1), which yielded medicine packages of French provenance, that may have been supplied in Red Cross packets. It can thus be considered that the French POW contingent may also have been accompanied by their own doctor or medic (*Hasil et al. 2021*, esp. Fig. 13 and Tab. 3). This hypothesis could be contradicted by the fact that findings of medicinal and healing substances are relatively common in the context of labour camps, as their inhabitants suffered from strenuous labour (cf. findings from Stalinist labour camps of the 1950s at the uranium mines in the Jáchymov region, *Vařeka 2020*), but the new finds of medical packaging made in 2022 extend the representation of this category well above the usual level (*Fig. 14*).

Archaeozoological analysis of animal bones

A small assemblage containing 11 fragments of animal bones was excavated from 20 cm to the bottom layer during the 2022 campaign. Nine fragments come from ribs (*Fig. 15*: top and left) and two are fragments of burnt diaphyses (*Fig. 15*: bottom right).

From a taphonomic point of view, the finds show a higher degree of degradation; soil conditions caused the disintegration of the ribs, so the collection may not represent all of the originally deposited material. However, since most of the finds are particularly fragile elements of the skeleton (ribs), we do not assume that durable elements such as teeth, long bones of the limbs, finger joints, skull and others were originally part of the deposition, except for the mentioned small fragments of burnt bone diaphysis.

Fragments of wider ribs with a maximum recorded width of 3.6 cm belong to a large mammal. Although the fragments do not bear unequivocal taxonomically diagnostic features, we can completely rule out that they belonged to humans and non-ungulates. Since horse was excluded based on the morphology of some fragments, we can assume the second large farm animal in our region, the domestic cow (*Bos taurus*), which fits the observed morphology well. The morphological observation does also not allow a determination of whether the rib fragments formed one continuous piece of the body, or even to say that they belong to the same individual. The diagram therefore illustrates the volume of material rather than the exact position (*Fig. 15*: centre). However, as the diagram suggests, the back of the thorax was not recorded and the front ribs appeared only exceptionally, if at all. However, the excavated ribs represent the fleshy part of the body, albeit with a lower meat content. At least two rib fragments were cut diagonally with a saw, which evidences portioning outside the joints (*Fig. 15*: photo on the left). The longest preserved rib fragment (24 cm in length) does not correspond to cooking in a small pot.

One burnt fragment of the diaphysis belongs to a large and the other to a medium-sized mammal, thus testifying to the presence of at least two animal species in the given context. The burning of the bones is perfect, to a white colour, so we can speculate they were disposed of in a fire after consumption.

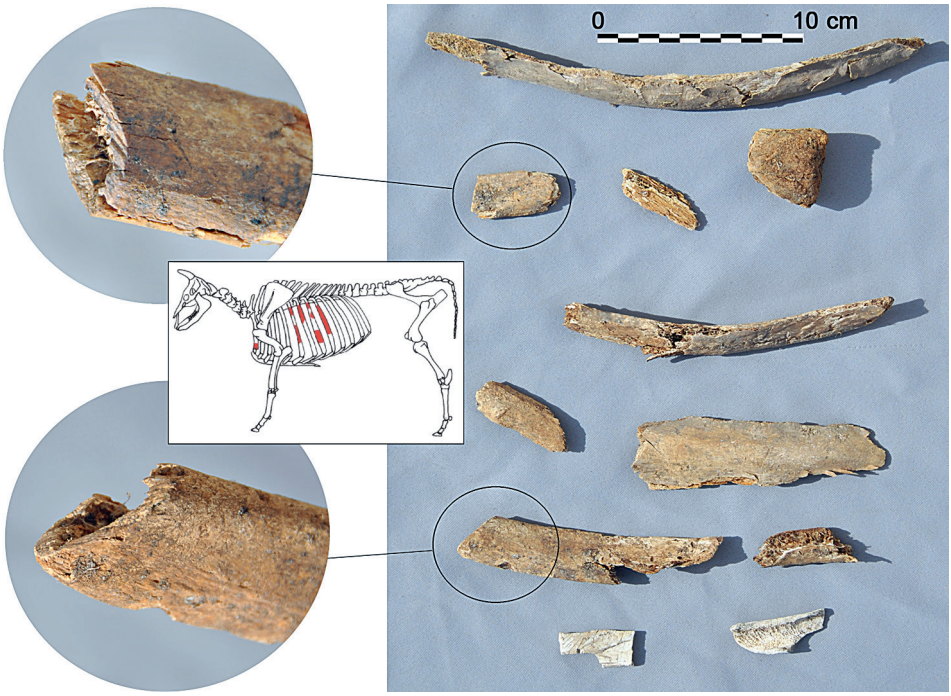


Fig. 15. Sauersack/Rolava. Bone finds from the layer 20 cm–bottom. Right – complete assemblage of excavated bones (bottom two burnt fragments, above ribs). Left – details of diagonal sawing on two rib fragments. Centre – diagram of the cattle skeleton with the approximate anatomical position of the excavated rib (photo by R. Kyselý).

Cattle ribs were also identified in the assemblage excavated in 2019. Some of the cattle ribs in Facility Nr. 3 were also cut with a saw, but they are far from the dominant component there. Although the assemblage from 2019 found at the POW camp is more variable in terms of anatomical and taxonomic composition and includes more meaty parts of animal bodies (proximal parts of the limbs, vertebrae), they provide the same basic information. In both cases, they represent fleshy, commonly consumed body parts. Also, burnt bones were detected in both excavations. The obvious prevalent consumption of beef over, for example, less prestigious and cheaper pork is interpretationally challenging. A possible starting point here is the higher durability of beef during transport and storage in suboptimal conditions, as illustrated by traditional bans on pork in Middle Eastern (Islamic, Jewish) cultures.

Conclusion: things, peoples, and identities behind the barbed wire

The archaeological study of the settlement waste of specific communities formed by the historical circumstances of World War II is now a highly frequent and globally expanding research topic. Interest in these issues was sparked in the context of Holocaust commemoration (*Theune 2006*; *2010*), but soon expanded to include various groups of internees

(e.g. US citizens of Japanese origin, *Camp 2016*), forced labourers (*Vařeka 2024*), and naturally also combatants (e. g. Luftwaffe personnel in Finland, *Väisänen et al. 2023*). Only in quite exceptional cases, however, can archaeological interest in World War II camps be considered comprehensive on the level of evidence and preservation, of (academic) research, and on the level of presentation to the public (the situation in the State of Brandenburg is exceptional in this respect, cf. *Kersting 2022*).

The involvement of semi-professional researchers and often mere collectors of World War II artefacts is currently very high and unfortunately not always positive. On the one hand, it brings, especially through the deployment of metal detectors, knowledge about unique artefacts (post-processual 'biographies of things', e.g. *Alsdorf 2001*), but at the same time threatens the contexts that should be investigated in their entirety (complex analysis of artefacts and ecofacts, study of processes of selection and formation of settlement waste).

On the contrary, so far less common academic, processual-oriented research, which focuses mainly on the mutual contextualisation of individual categories of artefacts and ecofacts (e.g. *Olsen – Witmore 2014*; *Hausmair 2017*; *Seitsonen et al. 2021*; cf. *Baloun – Kypta 2023*, 43, who dismiss it as an 'archaeological children's game'), has yielded the most significant results for understanding group identities, social status, and everyday life of recent and only apparently well-known specific communities. We have addressed its principles in the case of the Sauersack/Rolava POW camp excavations.

Research on the newly identified main settlement waste dump in 2022 provided new information and confirmed existing knowledge on the transformations related to the formation of the settlement waste community inhabiting this specific settlement. The nature of the immovable features (an intentional landfill connected to the camp site by a narrow-gauge railway) showed that waste management was significantly regulated. Thus, complex patterns of settlement waste transformations need to be rethought, which is a major interpretive shift from the results of the 2019 campaign. More organised waste management was considered only in the settlement area of the civil mining specialists (*Hasil et al. 2021*, 8).

The excavated artefacts and ecofacts confirmed very close patterns and identical trends to the POW camp waste from the 2019 campaign. It was possible to demonstrate that a sample as small as approximately 1 m^3 is sufficient for identify the community that produced it. On the other hand, it is now clear that the material world of the community inhabiting the camp was much more complex than could be described by artefacts and ecofacts coming from the context of intentional waste disposal alone. Thus, even a comprehensive image of life at the settlement would not be complete if it depended solely on the archaeological record. Most glaring in this respect is the absence of material evidence of the two antagonistic groups, the prisoners and the guards, as well as the utterly meagre number of finds that could be associated with the equipment of modern armies. Although military gear components are not a category of items that would enter settlement waste on a daily basis, it is still surprising that the rotation of many hundreds of men (POWs were not deprived of their own equipment, on the contrary, they were re-supplied with loot or German gear elements, if needed), including at least dozens of fully equipped Wehrmacht guards, caused practically no contamination of the regularly discarded waste. In the future, research interest will therefore need to be directed towards the recognition of other find contexts such as lost objects we might expect, e.g. in the camp's sewers, latrines, and the remains of residential buildings. In contrast, the discovery of a large number of medicine

containers points in an incredibly straightforward direction to the memories of eyewitnesses about German and Belarussian doctors – and above all both in a semi-formal status – at the site. We regard all of these observations as substantial methodological insight, especially for the archaeology of societies and cultures whose internal structure lacks a non-archaeological key to being understood.

Waste management has been repeatedly described in other contexts as a material manifestation of claiming group identity (*Birch 2012*; *Burgert et al. 2014*; *Květina – Řídký 2017*). In the case of a specific settlement such as the POW camp, we can reformulate this view in the way that the instrumentalisation of human and material actors (*Hasil et al. 2021*, 24) led to the imposition of this identity. It is remarkable that groups which, based on the historical narrative, we will always consider antagonistic within the community of inhabitants (captives vs. guards) respected this social reality at least to the extent that they acted in unity at the level of waste management.

Finally, let us return to Tolstoy's thesis that the role of the individual in history cannot be seen as central or peripheral. This paper, then, has sought to demonstrate that a collection of (sub)recent, seemingly banal artefacts and ecofacts can, perhaps as a single source, preserve the trace of nameless men '*who fired, or transported provisions and guns*' or co-formed the community of Sauersack/Rolava POW camp residents. As such, they are significant material relics of World War II alongside iconic artefacts attracting tens of thousands of visitors each year, i.e. the *USS Arizona*, the Boeing B-17F of Ser. No. 41-24485 called *Memphis Belle*, and U-Boat Type VIIC *U-995*, which represent the imaginary role of Emperor Napoleon or Tsar Alexander in Tolstoy's parable. We believe that we have succeeded in demonstrating that modern settlement waste provides a space for the full application of archaeological theory and methods, and that it provides more than mere props for the actors of the historical narrative, offering equally valuable, authentic, and immanent testimony.

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