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Thunau am Kamp – nova istraživanja ranosrednjovjekovnog visinskog lokaliteta

Cilj ovog rada je dati pregled istraživanja na visinskom nalazištu Thunau am Kamp, koje je jedinstveno u Donjoj Austriji zbog tamošnjih opsežnih arheoloških istraživanja. U karolinškom razdoblju ovaj prostori utvrđeni kompleks obuhvaćao je gospodarsko imanje sa zgradama (Herrenhof) smješteno u središtu, veliko groblje, bedeme, vrata itd. Rad će se također kratko osvrnuti na povijest istraživanja s posebnim naglaskom na arheološka iskopavanja i analize. Fokus će biti na najnovijim istraživanjima koja se odnose na proučavanje središta moći na Schanzbergu ali i povezanog naselja orijentiranog na proizvodnju u dolini podno Schanzberga, a koja uključuju arheološka istraživanja, prirodoslovne pristupe i prospekciju.

Ključne riječi: središnje mjesto, povijest istraživanja, rani srednji vijek, Donja Austrija.

Thunau am Kamp – New Research on the early medieval hilltop site

This presentation aims at giving an overview of the research concerning the hilltop site of Thunau am Kamp. It is unique in the region of Lower Austria with regard to its extensive archeological investigation. In Carolingian times this large-scale fortified complex comprised a centrally situated homestead (Herrenhof) including a large cemetery, ramparts, gates etc. The research history in terms of excavations as well as analyses will be briefly reviewed, while the focus will be on latest research: This regards on one hand the centre of power on the Schanzberg and on the other hand an associated production-oriented settlement in the valley at the foot of the Schanzberg, comprising archaeological research as well as natural sciences and prospection approaches.

Key words: central site, research history, early middle ages, Lower Austria.

Uvod

Visinsko nalazište Thunau am Kamp smješteno je u sjevernoj Donjoj Austriji, u dolini rijeke Kampa (sl. 1). Zbog tamošnjih opsežnih arheoloških istraživanja, ovo je jedno od najvažnijih nalazišta u austrijskom istraživanju rane povijesti. Od 1965. do 2015. godine Institut za prapovijest i ranu povijest (danas Institut za prapovijest i povijesnu arheologiju) Sveučilišta u Beču provodio je redovita iskopavanja na ovom lokalitetu. U karolinškom razdoblju na brdu Schanzbergu nalazio se prostrani utvrđeni kompleks, koji se tumači kao središnje naselje. Cilj je ovim radom pružiti sveobuhvatan pregled dosadašnjih istraživanja visinskog lokaliteta i njegove okolice s naglaskom na posljednja desetljeća.

Schanzberg (sl. 2) je topografski podijeljen na tri dijela. Na zapadu se nalazi tzv. Schanze, područje koje površinom zauzima oko 100×150 m, smješteno na izbočini. Nakon blagog sužavanja terena slijedi visoravan Obere Holzweise, a sjeveroistočno od nje, nakon strmijeg dijela terena, nalazi se Untere Holzweise. Na istoku se greben gotovo okomito spušta prema rijeci Kampu, a prema sjeveru tvori terase ispred udubljenja u terenu (tzv. Nordhang).¹

Višefazna fortifikacija visinskog nalazišta (sl. 3) uključivala je bedeme izgrađene na temeljima drveno-kamene konstrukcije obložene granulitnim pločama i kompleks vrata. Gospodarsko imanje, tzv. Herrenhof, smješteno u središtu Oberea Holzweise, bilo je ograđeno drvenim palisadama, a u neposrednoj blizini nalazilo se pripadajuće groblje. Po cijelom Schanzbergu pronađeni su tragovi stambenih i gospodarskih zgrada kao i izolirani ukopi.

Dokazi intenzivne ranosrednjovjekovne naseljenosti vidljivi su i u okolici Schanzberga, gdje je na sjeverozapadnoj strani Schanzea otkrivena skupina tumula (vidi sl. 2).² U podnožju Schanzberga, na području Thunaua, pronađeni su brojni plitki grobovi i ostatci naselja. Ovo područje, poznato kao središte proizvodnih i prerađivačkih aktivnosti, služilo je, među ostalim, za opskrbu glavnog utvrđenog lokaliteta.³

Zbog povijesne situacije (Thunau se u 9. stoljeću nalazio između dviju sfera moći, proširenog Karo-

Introduction

The hilltop site of Thunau am Kamp is situated in northern Lower Austria in the valley of the river Kamp (Fig. 1). In the Austrian research of early history this site holds a special place, due to its extensive archaeological investigation. From 1965 to 2015 regular excavation campaigns were conducted by the institute of pre- and early history (today institute of prehistory and historical archaeology) of the University of Vienna. In Carolingian times a large-scale fortified complex interpreted as a central settlement, was located on the hill called "Schanzberg". This presentation aims at giving an overview of the research on the hilltop site and its surroundings, focussing on the last decades.



Sl. 1. Položaj Thunaua u sjevernoj Donjoj Austriji (karta: Th. Pertlwieser, Institut za prapovijest i povijesnu arheologiju, Sveučilište u Beču)

Fig. 1 Position of Thunau in northern Lower Austria (map: Th. Pertlwieser [Institute for Prehistory and Historical Archaeology, University of Vienna])

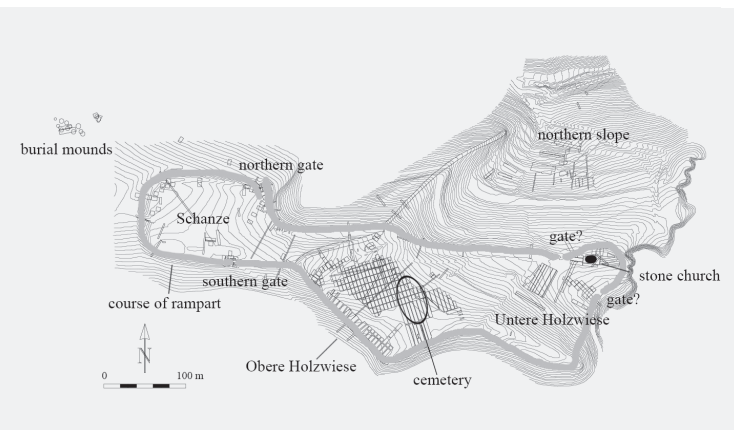
The Schanzberg (Fig. 2) is topographically divided into three parts: In the west lies the so-called Schanze, an area of approximately 100×150 m on a spur; after a slight narrowing of the terrain, it is followed by the plateau of the Obere Holzweise, on the northeast side of which lies the Untere Holzweise after a slope in the terrain. Finally, the ridge in the east drops almost vertically towards the Kamp; towards the north it forms terraces in front of a depression in the terrain (so-called Nordhang).¹

¹ Friesinger, Friesinger 1975, str. 29.

² Breibert 2013; Breibert 2018.

³ Vidi izbor radova: Friesinger 1965, str. 44, 56; Friesinger, Friesinger 1975, str. 35; Daim 1988, str. 335; Obenaus, Breibert, Szameit 2006; Obenaus 2011; Obenaus 2018.

¹ Friesinger, Friesinger 1975, p. 29.



Sl. 2. Topografija i odabrane građevine visinskog nalazišta Thunaua, stilizirani prikaz bedema (M. Doneus, Institut za prapovijest i povijesnu arheologiju, Sveučilište u Beču)

Fig. 2 The topography and selected structures of the hilltop site of Thunau; stylized course of the rampart (after M. Doneus [Institute for Prehistory and Historical Archaeology, University of Vienna])

linškog Carstva i (Veliko) Moravskog Carstva, dok se na sjeverozapadu nalazila regija čeških „plemena“ politička pripadnost proširenih dijelova Donje Austrije sjeverno od Dunava nije jasna,⁴ što nameće važna pitanja za arheologiju.

Istraživanje

Povijest istraživanja

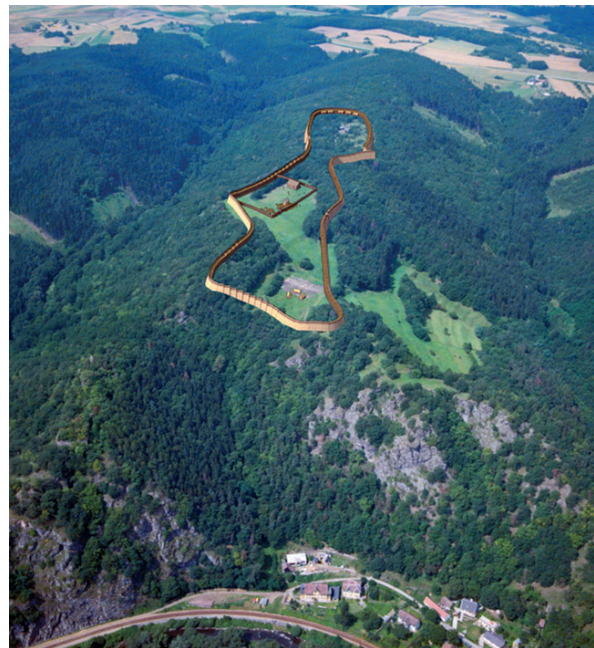
Od druge polovice 19. stoljeća, tijekom građevinskih radova u podnožju Schanzberga, više puta su otkrivani nalazi koji potječu iz ranog srednjeg vijeka, uglavnom povezani s velikim grobljem na padini Goldberga. Naselje na području Holzwiese otkrio je J. Krahuletz početkom 1870-ih godina.⁵ Početkom 20. stoljeća uslijedila je kratka publikacija A. Plessera, a 1916. godine obavljeno je prvo kartografsko snimanje lokaliteta.⁶ Između 1929. i 1949. J. Höbarth provodio je iskopavanja na područjima Holzwiese i Schanzea. Prva sustavna istraživanja pokrenuo je 1965. godine H. Friesinger s Instituta za prapovijest i ranu povijest Sveučilišta u Beču, čime su započela godišnja iskopavanja na Schanzbergu koja su trajala sljedećih 25 godina.⁷ Od 1993. do 2003. godine arheološka istraživanja visinskog lokaliteta nastavljena su pod vodstvom

⁴ Zehetmayer 2007, str. 22, sl. 2.1; Zehetmayer 2018.

⁵ Krahuletz 1975.

⁶ Plessner 1907, str. 681; Friesinger 1975, str. 31.

⁷ Friesinger, Friesinger 1975; Friesinger, Friesinger 1991.



Sl. 3. Ranosrednjovjekovno visinsko nalazište Thunau am Kamp, digitalna rekonstrukcija (Arhiv fotografija iz zraka Sveučilišta u Beču, rekonstrukcija: DI Michael Lisner vdx.at, arheološka savjetnica dr. Hajnalka Herold)

Fig. 3 The early medieval hilltop site of Thunau am Kamp, digital reconstruction (Aerial Photo Archive University of Vienna, reconstruction: DI Michael Lisner vdx.at, archaeological consultant Dr. Hajnalka Herold).

The multi-phase fortification of the hilltop site (Fig. 3) consisted of ramparts, based on wood-stone constructions and faced with granulite slabs and gate constructions. The so-called Herrenhof (manor farm), centrally situated on the Obere Holzwiese, was delimited by wooden palisades; an associated burial ground lies in its immediate vicinity. Traces of residential and commercial buildings as well as isolated burials were found throughout the entire Schanzberg.

Evidence of intensive early medieval settlement is also present in the vicinity the Schanzberg: A group of barrows was discovered in the northwest of the Schanze (see fig. 2).² A considerable number of shallow graves and settlement remains are known from the foot of the Schanzberg in the Thunau area, a production and processing area that among others served to supply the central site.³

² Breibert 2013; id. 2018.

³ Selection: Friesinger 1965, p. 44, 56; Friesinger, Friesinger 1975, S. 35; Daim 1988, S. 335; Obenaus, Breibert, Szameit 2006; Obenaus 2011; id. 2018.

E. Szameita.⁸ Zbog zaštitnih istraživanja 2004. godine, pod vodstvom M. Obenausa, iskopavanja su prebačena sa Schanzberga na područja u njegovu podnožju,⁹ čime je započeo desetogodišnji projekt istraživanja na tom području.¹⁰

Godine 2015.¹¹ provedena su revizijska iskopavanja u zapadnom dijelu bedema Schanzea. Očišćen je stari usjek u bedemu kako bi se prikupili uzorci drva za dendrokronološke analize, jer su prethodna istraživanja zabilježila relativno dobro očuvane drvene konstrukcije bedema. Cilj tih analiza bio je dobiti apsolutno datiranje i usporediti ga s dosad preciznije datiranim bedemima glavnog prostora. Nažalost, nijedan od uzoraka nije sadržavao očuvanu drvenu jezgru, pa će vjerojatno jedina dostupna metoda datiranja biti radiokarbonska analiza.

Due to the historical situation – in the 9th century Thunau is situated between the two spheres of power of the enlarged Carolingian Empire and the (Great) Moravian Empire, while in the northwest there was the region of the Bohemian ‘tribes’ – the political affiliation of extended parts of Lower Austria north of the Danube is unclear,⁴ which provokes interesting questions for archaeology.

Research

Research history

Since the second half of the 19th century early medieval finds repeatedly came to light during construction works at the foot of the Schanzberg, mainly stemming from a large burial ground on the slope of the Goldberg. The settlement on the Holzwiese was discovered at the beginning of the 1870s by J. Krahuletz.⁵ At the beginning of the 20th century this was followed by a brief publication by A. Plessner and finally a cartographic recording in 1916.⁶ Between 1929 and 1949, excavations were carried out by J. Höbarth on the Holzwiese and on the Schanze. Initial investigations by H. Friesinger, institute of pre- and early history of the University of Vienna, in 1965 marked the beginning of annual systematic excavations on the Schanzberg over the next 25 years.⁷ From 1993, archaeological research on the hilltop site continued under E. Szameit until 2003.⁸

In 2004 rescue excavation entailed a relocation of the investigations from the heights of the Thunau Schanzberg to areas at its foot, under the responsibility of M. Obenaus.⁹ They were followed by a project based ten year excavation in this area.¹⁰

In 2015¹¹ an excavation for revision purpose in the western rampart of the Schanze was carried out. An old cut through the wall was cleaned in order to attain wood for dendrochronological analyses, as fairly good preservation of wood of the rampart construction had been mentioned regarding the



Sl. 4 Thunau am Kamp, glavni dvorac s gospodarskim imanjem: palisade, glavna kuća, groblje i nepotvrđena crkva (digitalna rekonstrukcija: DI Michael Lisner vdx.at, arheološka savjetnica dr. Hajnalka Herold).

Fig. 4 Thunau am Kamp. The main castle with manor farm — palisades, manor house, burial ground and a not verified church (digital reconstruction: DI Michael Lisner vdx.at, archaeological consultant Dr. Hajnalka Herold).

Analize i publikacije

Tijekom 1990-ih godina analize su se prvenstveno fokusirale na prapovijesne aspekte Schanzberga,

⁸ Za detaljniji uvid u istraživanja vidi Szameit 2018.

⁹ Obenaus, Breibert, Szameit 2006.

¹⁰ Obenaus 2011; Obenaus 2015; Obenaus 2018; Obenaus 2022.

¹¹ Obenaus 2017.

⁴ Zehetmayer 2007, p. 22 Abb. 2.1; Zehetmayer 2018.

⁵ Krahuletz 1975.

⁶ Plessner 1907, p. 681; Friesinger 1975, p. 31.

⁷ Friesinger, Friesinger 1975; Friesinger, Friesinger 1991.

⁸ For more detailed insight in the excavation works the see Szameit 2018.

⁹ Obenaus, Breibert, Szameit 2006.

¹⁰ Obenaus 2011; id. 2015; id. 2018; id. 2022.

¹¹ Obenaus 2017.

pa su stoga i publikacije obrađivale to razdoblje, kao na primjer rad D. Kern o nalazima iz kasnog brončanog doba na Untereu Holzwiseu¹² ili onaj B. Wewerka o lokalitetu Obere Holzwise.¹³ Također su predstavljeni nalazi i rezultati istraživanja naselja iz latenskog doba.¹⁴ Arheološke publikacije H. Friesingera i E. Szameita¹⁵ pružile su prve sveobuhvatne analize i interpretacije ranosrednjovjekovnog visinskog nalazišta. Zahvaljujući B. Cech,¹⁶ objavljeni su keramički nalazi iz Schanzberga, pronađeni u razdoblju od 1965. do 1990. godine, uključujući i nalaze keramike iz jama ili grobova. Pronađena količina nudi poprilično dobar pregled keramike (njezinih oblika i ukrasa) zastupljene na Schanzbergu. Međutim, kronološka analiza bila je moguća samo u određenoj mjeri, što je i uobičajeno za ovakvu vrstu nalaza.

Projekt H. Herold¹⁷ bio je usmjeren na istraživanje i analizu gospodarskog imanja, pri čemu je rekonstruirala tri faze razvoja, prethodnu namjenu naselja i fazu koja je uslijedila. Kompleks je obuhvaćao građevine, palisadne sustave i veliko groblje (sl. 4). Građevine su pretežno identificirane prema negativnim koncentracijama odnosno distribuciji nalaza, dok su utonule građevine rijetke zbog plitkog sloja tla iznad čvrste kamene podloge.

Groblje koje je pripadalo imanju detaljno je obrađeno u doktorskoj disertaciji autorice.¹⁸ S ukupno 215 grobova, riječ je o najvećem karolinškom groblju otkrivenom u Donjoj Austriji, sjeverno od Dunava. Svrstava se u tzv. prestižna groblja, na kojima se pokapala elita koja je živjela u središtima na istoku Karolinškog Carstva. Uz standardne analize pogrebnih običaja i grobnih priloga kao i njihovo datiranje (sl. 5), koji omogućuju rekonstrukciju vremenskog slijeda korištenja i tumačenje prostorne distribucije grobova (putem staze), posebna pažnja posvećena je prikazu društvenih identiteta, poput dobno specifičnih rodni uloga i društvenog statusa.

Veliki broj grobova datira u 9. stoljeće, a pojedine faze ukapanja mogle bi se djelomično povezati s fazama imanja. Prisutnost moravsko-karolinške

original excavation. The aim was an absolute dating and its comparison with the hitherto better dated ramparts of the main area. Unfortunately the wood core was gone in all samples and there may only be ¹⁴C-dates possible.

Analysis and publications

In the 1990s analysis were mainly focussing on prehistoric aspects of the Schanzberg, leading to publications about late bronze age findings on the Untere Holzwise by D. Kern¹² and the Obere Holzwise by B. Wewerka.¹³ Also latène age settlement findings and finds were presented, by M. Karwowski.¹⁴

Archaeological publications by H. Friesinger und E. Szameit¹⁵ presented first comprehensive overviews and interpretations of the early medieval hill-top site.

Thanks to B. Cech¹⁶, the ceramic finds from the Schanzberg from 1965 to 1990 have been published. This concerns as well any findings yielding ceramics such as pits or graves. The volume is a good basis for getting an overview of the ceramics represented on the Schanzberg, their shapes and decorations. A chronological evaluation was - as expected for this type of finds - only possible to a limited extent.

A project by H. Herold¹⁷ was dedicated to the analyses of the manor farm. She reconstructed three phases of the manor farm, as well as preceding settlement use and a following phase. The manor farm consisted of settlement structures, palisade-systems and a large burial ground (Fig. 5); the buildings were mainly recognisable by negative find concentrations/distribution. Sunken buildings are very rare here, as there was but shallow soil left above the jointed bedrock.

The burial ground which belonged to the manor farm was analyzed in a dissertation project by the author.¹⁸ With its 215 burials it is by far the largest uncovered burial ground of Carolingian times in Lower Austria north of the Danube. It can be counted as one of the so-called prestigious burial

¹² Kern 2001.

¹³ Wewerka 2001.

¹⁴ Karwowski 2006.

¹⁵ Szameit 1995; Szameit 1998; Friesinger, Friesinger 1991.

¹⁶ Cech 1991; Cech 2001.

¹⁷ Prvi sažeti prikaz rezultata donosi se u: Herold 2008.

¹⁸ Nowotny 2011; Nowotny 2013; Nowotny 2018a; Nowotny 2018c.

¹² Kern 2001.

¹³ Wewerka 2001.

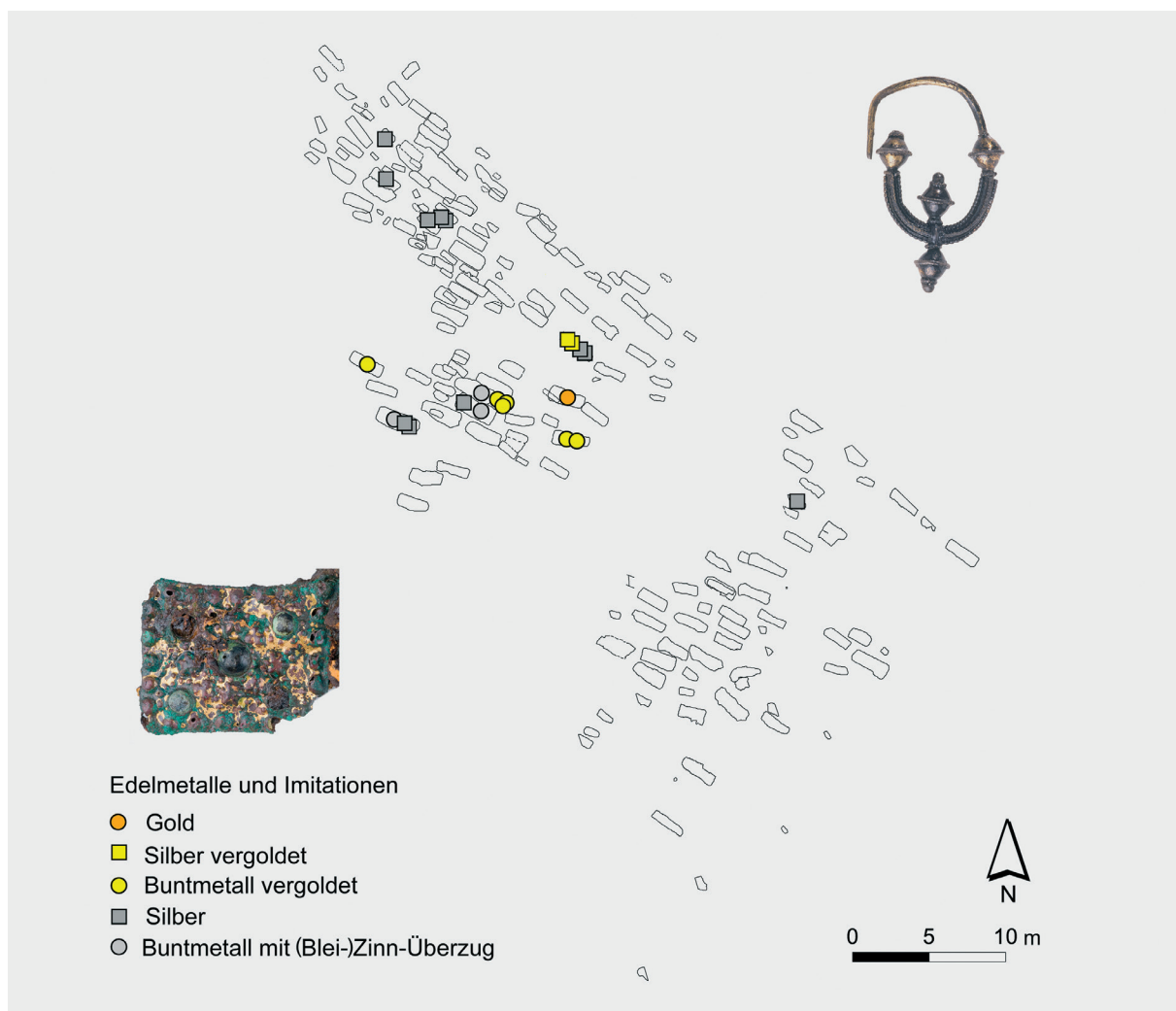
¹⁴ Karwowski 2006.

¹⁵ Szameit 1995; id. 1998; Friesinger, Friesinger 1991.

¹⁶ Cech 1991; Cech 2001.

¹⁷ Herold 2008 is a first summarizing presentation of the results.

¹⁸ Nowotny 2011; id. 2013; id. 2018a; id. 2018c.



Sl. 5. Groblje na Obereu Holzwiseu u Thunauu, distribucija predmeta od plemenitih metala, predmeta s odgovarajućim premazom i njihovih imitacija. Zbog ovih i drugih parametara grobovi su interpretirani kao ukopi elitne *familia* (E. Nowotny). Naušnica iz groba 80, fibula iz groba 208

(G. Gattinger, Institut za prapovijest i povijesnu arheologiju, Sveučilište u Beču)

Fig. 5 The burial ground on the Obere Holzweise of Thunau. Distribution of objects made of precious metal or with a corresponding coating and their imitations; these and other parameters led to an interpretation of burials of an elite *familia* (E. Nowotny). Earring of grave 80, fibula of grave 208 (G. Gattinger, Institute for Prehistory and Historical Archaeology, University of Vienna).

komponente u grobnim priložima odgovara geopolitičkom položaju ovog visinskog nalazišta. Različite kategorije materijalne kulture prisutne u grobovima analizirane su u zasebnim kategorijama, kao na primjer tekstilni¹⁹ i kožni²⁰ ostatci, metalografija²¹ i botanički uzorci.²²

Godine 2015. održana je konferencija pod nazivom „50 godina Thunaua“, čiji zbornik radova obuhvaća različite teme vezane za lokalitet Thunau

sites, that the elite who lived in the centres in the east of the Carolingian empire were buried in. Beside classical topics like burial customs and the dating/analyses of grave goods (Fig. 5), both leading to an occupancy sequence and an interpretation of the spatial division of the graves (by a pathway) special emphasis was laid on the investigation of the display of social identities, for example age specific gender roles and social status.

The plurality of graves dates into the 9th century; it was partly possible to assign the burial phases to the phases of the manor farm. The manifestation of a Moravian Carolingian component in the grave fur-

¹⁹ Grömer, Nowotny 2018; također vidi Grömer, Nowotny, Obenaus 2017.

²⁰ Ruß-Popa 2018.

²¹ Mehofer 2018; Nau 2018.

²² Uzunoglu-Obenaus 2018.

i srodna nalazišta te komplekse iz istog razdoblja. Radovi o Thunauu posvećeni su temama poput povijesti istraživanja,²³ naseljavanja Schanzberga od neolitika,²⁴ ranosrednjovjekovnih aspekata,²⁵ povijesnih razmatranja,²⁶ antropoloških²⁷ i arheobotaničkih²⁸ istraživanja, numizmatike,²⁹ tekstilne arheologije,³⁰ eksperimentalne arheologije,³¹ dendrokronologije³² i arheomagnetskih istraživanja.³³

Mala kamena crkva i nekoliko grobova na plateau Untere Holzwiese na Schanzbergu (sl. 6), smješteni u vanjskom oboru, izazivali su polemike oko datacije i interpretacije još od vremena iskopavanja. Sustavna evaluacija³⁴ grobova i novi rezultati radiokarbonskog datiranja crkve i grobova doveli su do novih spoznaja. Crkva je sagrađena neposredno prije ili tijekom uključenja regije u Babenberšku oblast, najranije krajem 10. stoljeća. Njezino propadanje ili rušenje u kasnom srednjem vijeku poklapa se s izmjenama ili napuštanjem dvorca Thunaua. Smatra se da je riječ o maloj privatnoj crkvi ili udaljenoj kapeli dvorca, koja je uglavnom istražena zbog svoje sekundarne funkcije kao mjesto ukopa. U blizini ove udaljene crkve, koja nije imala pravo na pokope, bila su pokapana djeca, čime se nastojalo pozitivno utjecati na njihov problematičan posmrtni identitet, odnosno ova praksa upućuje na mogućnost da su pokopana djeca bila nekrštena.

Još jednu manju objavljenu skupinu nalaza³⁵ čine predmeti iz ostave (sl. 7) koja je otkrivena u plitkoj jami na rubu gospodarskog imanja. Ostava je sadržavala željezne predmete poput ostruga, okova za ostrugu, srpova, sjekira, tesle i drugih predmeta. Osim ostruga, artefakti se ne mogu precizno datirati, no pretpostavlja se da su na mjesto nalaza odloženi u posljednjoj trećini 9. stoljeća ili kasnije. Istovremeno, muški ukopi na groblju gospodarskog

nishings corresponds with the geopolitical position of the hilltop site. Various categories of the material culture present in the graves have been investigated separately: They deal with the textile¹⁹ and leather²⁰ residues, metallography²¹ and botanical²² material.

In 2015 a conference was held under the name “50 years of Thunau”. The conference proceedings include contributions on a wide range of topics, both on the Thunau site and on related sites or archaeological complexes. Contributions on Thunau were devoted to the following topics: the history of research²³, the settlement of the Schanzberg since the Neolithic period²⁴, early medieval aspects²⁵, historical considerations²⁶, anthropological²⁷ and archaeobotanical²⁸ investigations, numismatics²⁹, textile archaeology³⁰, experimental archaeology³¹, dendrochronology and archaeomagnetic research³².

A small stone church and a few burials on the plateau of the „Untere Holzwiese“ on the Schanzberg (Fig. 6), in the outer baily, had been controversially discussed in regards to their dating and interpretation since their excavation. The systematic evaluation³³ of the burials and newly taken ¹⁴C-dates of the church as well as the burials led to new insight in this regard. The church was built shortly before/during the incorporation of the region into the Babenberger realm, at the earliest in the late 10th. Its decay/demolition in the late middle ages corresponds to the time of modification or conveyance of castle Thunau. It may thus have been a small proprietary church or a remote castle chapel. It is mainly investigated regarding its secondary function as a burial place. The children were laid down

²³ Szameit 2018.

²⁴ Kern 2018; Locher 2018; Karwowski 2018; Fries 2018.

²⁵ Nowotny 2018; Breibert 2018; Obenaus 2018; Pleterski 2018.

²⁶ Zehetmayer 2018.

²⁷ Teschler-Nicola *et al.* 2018.

²⁸ Popovtschak/Zwiauer 2018.

²⁹ Militký 2018.

³⁰ Grömer 2018.

³¹ Lobisser 2018.

³² Cichocki 2018.

³³ Schnepf 2018; također vidi Schnepf, Obenaus, Lannos 2015.

³⁴ Nowotny 2020a.

³⁵ Nowotny 2018.

¹⁹ Grömer, Nowotny 2018; see also Grömer, Nowotny, Obenaus 2017.

²⁰ Ruß-Popa 2018.

²¹ Mehofer 2018; Nau 2018.

²² Uzunoglu-Obenaus 2018.

²³ Szameit 2018.

²⁴ Kern 2018; Locher 2018; Karwowski 2018; Fries 2018.

²⁵ Nowotny 2018; Breibert 2018; Obenaus 2018; Pleterski 2018.

²⁶ Zehetmayer 2018.

²⁷ Teschler-Nicola *et al.* 2018.

²⁸ Zehetmayer 2018.

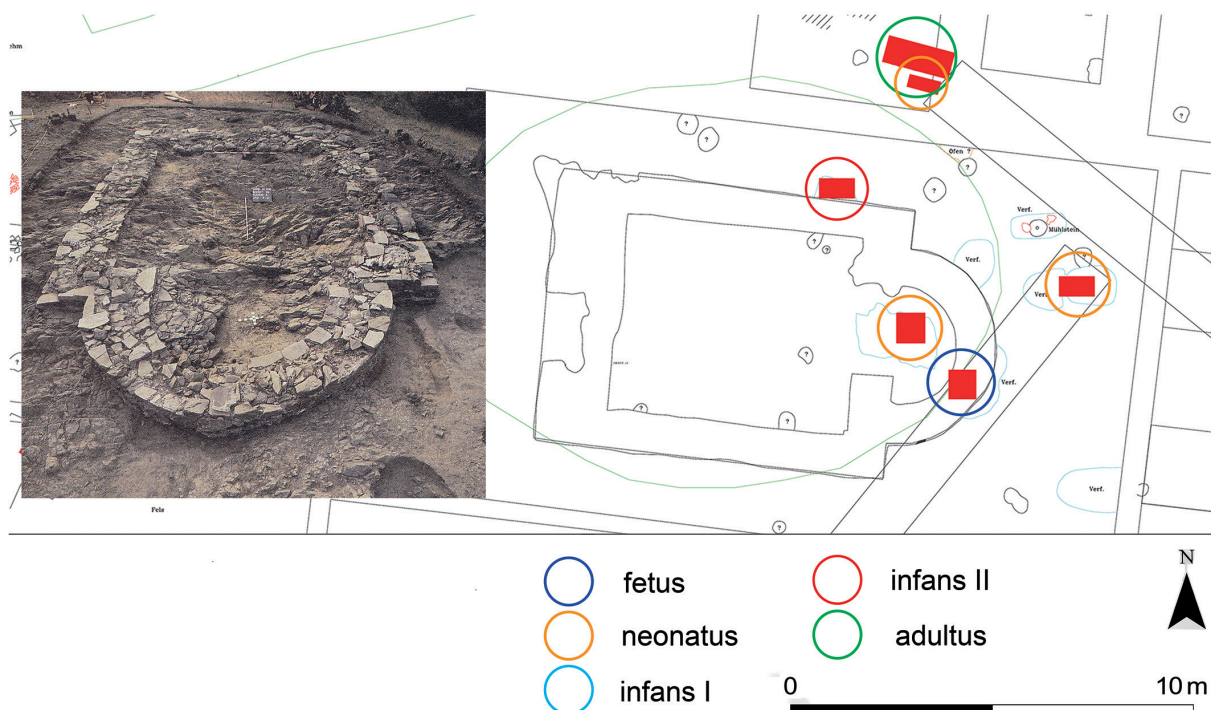
²⁹ Teschler-Nicola *et al.* 2018.

³⁰ Grömer 2018.

³¹ Lobisser 2018.

³² Schnepf 2018; see also Schnepf, Obenaus, Lannos 2015.

³³ Nowotny 2020a.



Sl. 6. Crkva na Untereu Holzwiseu tijekom istraživanja (prema Friesinger 1987, str. 141) i tlocrt iste (prema Kaltenegger 2007, str. 140) s prikazom kategorija starosti i datiranjem ukopa (karta: M. Doneus, Institut za prapovijest i povijesnu arheologiju, Sveučilište u Beču; grafika: E. Nowotny)
 Fig. 6 Church on the Untere Holzwise during the excavations (according to H. Friesinger 1987, 141), and floor plan of the same (according to M. Kaltenegger 2007, 140) and its floor plan with a mapping of the age classes and dating of the burials (map basis: M. Doneus, Institute for Prehistory and Historical Archeology at the University of Vienna; graphics: E. Nowotny).

imanja ukazuju na pripadnike elite, a njihovi grobovi su možda nastojali simbolično prenijeti dojam stabilnosti u nesigurnim vremenima. Akumuliranje i odlaganje vrijednih predmeta u grobovima također se može interpretirati kao mogući pokušaj učvršćivanja ili naglašavanja društvenog statusa.

Zapadno od Schanzberga nalazi se malo proširenje površine 100 × 150 m, visoravan s utvrdom i dvojim vratima poznata kao „Schanze“ (vidi sl. 2),³⁶ gdje su dokumentirani raštrkani grobovi i tragovi naselja. Međutim, problem predstavlja plitki sloj tla kroz koji izviruje matična stijena. Tijekom 2018. godine³⁷ provedena su manja iskopavanja koja su potvrdila dugogodišnju hipotezu da su aneksi građeni s unutrašnje strane zidina. Od 2023. godine provode se sustavne analize nalaza i otkrića sa Schanzea,³⁸ koje bi trebale dodatno razjasniti sta-

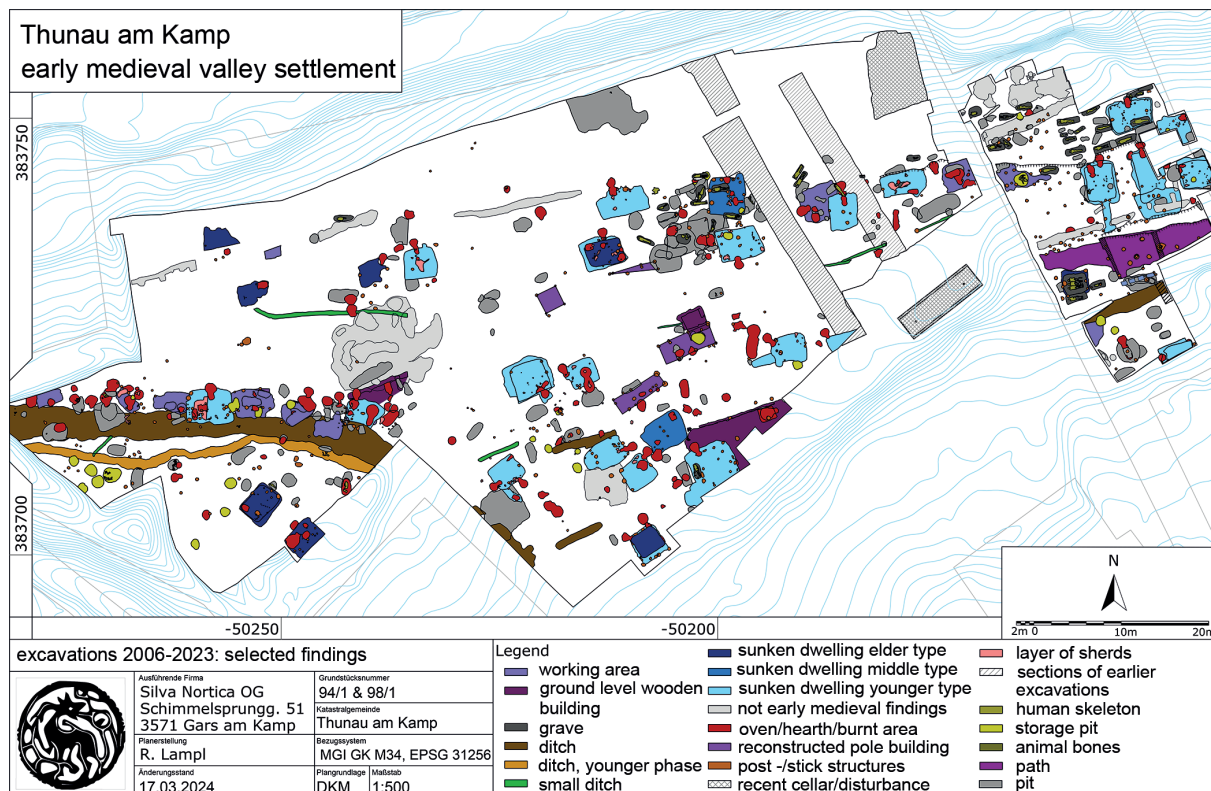


Sl. 7. Situacija pri otkriću ostave smještene na marginama područja imanja Thunau (fotografija je iz istraživačke kampanje H. Friesingera)
 Fig. 7. Find situation of a hoard find, at the margins of the manor area of Thunau (picture: excavation campaign under H. Friesinger).

³⁶ Sažeto u: Kührtreiber/Obenaus 2017, str. 78 f.

³⁷ Obenaus 2020, str. 227 f.

³⁸ Analize provodi W. Breibert iz Centra za upravljanje muzejskim zbirkama Sveučilišta za kontinuirano obrazovanje Krems.



Sl. 8. Nizinsko naselje Thunau am Kamp: generalni plan iskopavanja 2006-2023 s izabranim nalazima (R. Lampl; Silva Nortica OG)

Fig. 8. Valley settlement of Thunau am Kamp: overall plan of the excavations 2006–2023 with selected findings (R. Lampl; Silva Nortica OG).

ru hipotezu da je na ovom području posljednja faza gradnje bila još krajem 10. stoljeća.

Nalazi i otkrića iz naselja smještenog u dolini (sl. 8) pored prostranog groblja već su objavljeni u pregledu,³⁹ a M. Obenaus će ih detaljnije prezentirati u doglednoj budućnosti. Dosadašnja istraživanja ukazuju na to da je ovo naselje bilo mjesto proizvodnje s prigradskim karakteristikama, koje je u svojim ranijim fazama bilo čvrsto povezano sa središtem na Schanzbergu. Ovdje se obavljalo skladištenje i prerađa poljoprivrednih dobara, odvijala se intenzivna proizvodnja tekstila i keramike kao i kovačke aktivnosti itd. Tragovi kanala i veliki kameni žrvnjevi ukazuju na korištenje hidroenergije već u ranim fazama. Dok je središte na Schanzbergu postojalo do oko sredine 10. stoljeća, ovo naselje u dolini nastavilo je funkcionirati sve do ranog 11. stoljeća. Zapadni elementi materijalne kulture možda ukazuju na nekakav rani oblik kolonizacije koja je prethodila uvođenju kontrole i vlasti na ovom području od 11. stoljeća nadalje.

in spatial connection to this remote and conveyed church without burial rights to positively influence their problematic postmortem-identity, hinting to their unbaptized status.

Another minor find complex published³⁴ is a hoard find (Fig. 7), in a flat pit with iron artefacts. It was discovered at the margins of the manor farm-are and it contained spurs, fittings of a spur set, sickles, axes, mysters and objects. Apart from the spurs the artefacts cannot be dated closely, leading to the insight that the deposition of the hoard has taken place in the last third of the 9th century or later. At the same time male burials in the cemetery of the manor farm present an elite, maybe trying to convey stability in unstable times. Also the accumulating and deposition of valuable objects may be seen as a possible attempt to consolidate social status.

In the west of the Schanzberg there is a small extension of 100x150m, a plateau with fortification and two gates, called “Schanze” (see fig. 2)³⁵. Scattered graves and settlement traces have been documented, yet a difficulty is the only shallow soil

³⁹ Obenaus 2011; Obenaus 2015; Obenaus 2018; Obenaus 2022a.

³⁴ Nowotny 2018.

³⁵ Summarizing: Kühtreiber/Obenaus 2017, p. 78f.

Prirodne znanosti i metode prospekcije

Posljednjih desetljeća različite prirodne znanosti značajno su pridonijele razumijevanju životnih uvjeta ljudi koji su živjeli i bili pokopani na i oko Schanzberga te su također pomogle odgovoriti na pitanja vezana za datiranje i kronologiju. Disertacija E. Kanelutti⁴⁰ o životinjskim kostima s lokaliteta pružila je uvid u stočarstvo i njegovu ulogu u kasnom brončanom dobu i ranom srednjem vijeku. Činjenica da je visok postotak kostiju divljih životinja bio od životinja koje su imale prestižnu simboliku tumači se kao mogući pokazatelj privilegiranog lova već u ranim razdobljima.⁴¹

Apsolutno datiranje (dijelova) lokaliteta radiokarbonskom metodom obavljao je tim pod vodstvom P. Stadlera,⁴² dok je O. Cichocki provodio dendrokronološka istraživanja koja su dala datume *termini post quem* od 834. do 894. godine, jer nije dan uzorak nije imao zadnji god.⁴³ Radiokarbonsko datiranje drvenih uzoraka bedema ukazuje na razdoblje između 820. i 880. godine,⁴⁴ što sugerira dvije faze gradnje: jednu u drugoj polovici 9. stoljeća i jednu raniju (773. – 801.). Potonju fazu trebalo bi potvrditi dodatnim analizama jer uzorak nije potekao izravno iz konstrukcije.

Od 2019. do 2021. godine projekt je bio usmjeren na daljnje proučavanje građevina na i oko Schanzberga pomoću geofizičkih metoda prospekcije i daljinskog istraživanja. Primjena kombinacije zračnog i terestričkog laserskog skeniranja te radara za penetraciju tla dala je uvid u tokove staza i položaj bedema i kanala, a također su lokalizirana moguća nova vrata na istočnom dijelu Schanzberga (sl. 9).

Više od 370 pojedinaca (njihovi ostatci) proučava se na Odjelu za antropologiju Prirodoslovnog muzeja u Beču pod vodstvom M. Teschler-Nicola. Objavljene su detaljne⁴⁵ i pregledne publikacije⁴⁶ te znanstveni radovi,⁴⁷ a rezultati će u dogledno vrijeme biti predstavljeni kao monografija. Paleo-

above the outcropping bedrock. In 2018³⁶ the long postulated picture of annexes being built at the inside of the wall was the picture confirmed by small scale excavations. Since 2023 a systematic analyzes of the finds and findings of the Schanze is taking place³⁷. Among others they will shed light onto the old hypothesis, that there was a last construction phase as late as in the late 10th century in this area.

The findings and finds of the valley settlement (Fig. 8), next to an extensive burial ground, have been published in overview³⁸ and will be comprehensibly presented in the foreseeable future by M. Obenaus. So far it was made clear, that this productive settlement with a suburban character was in its earlier phases tightly bound to the center on the Schanzberg. Storage and processing of agricultural goods, large scale textile production, smithy, ceramic production etc. took place here. Trenches and large quern stones may hint to an early use of hydropower. Whereas the center on the Schanzberg ended somewhen around the middle of the 10th century, this valley-settlement continued into the early 11th century, western material culture maybe showing a kind of proto-colonisation preceding the permeation of these regions with control/rule from the 11th century onwards.

Natural sciences and prospection approaches

In recent decades, various natural sciences have made a significant contribution to our knowledge of the living conditions of the individuals living and buried on and around the Schanzberg as well as questions of dating and chronology.

A dissertation about the animal bones of the site by E. Kanelutti³⁹ shed light on the animal husbandry and their usage in the late bronze age as well as in the early middle ages. That a high percentage of wild animal bones were of animals, that are connected to prestige, was interpreted as a possible sign of early hunting privilege.⁴⁰

The absolute dating of (parts of) the site on the basis of ¹⁴C-dates was attempted by a team around

⁴⁰ Kanelutti 1990.

⁴¹ Herold 2011, str. 524.

⁴² Stadler *et al.* 1998–1999.

⁴³ Cichocki 1989–1999; također vidi Cichocki 2018.

⁴⁴ Stadler *et al.* 1998–1999; također vidi Stadler *et al.* 2000, str. 32.

⁴⁵ Teschler-Nicola *et al.* 1994; Gangl 2014; Nittmann, Teschler-Nicola 2014; Teschler-Nicola *et al.* 2015; Prohaska *et al.* (u pripremi); Rumpelmayr *et al.* (u pripremi).

⁴⁶ Teschler-Nicola *et al.* 2018.

⁴⁷ Rumpelmayr 2011; Pany-Kucera 2015.

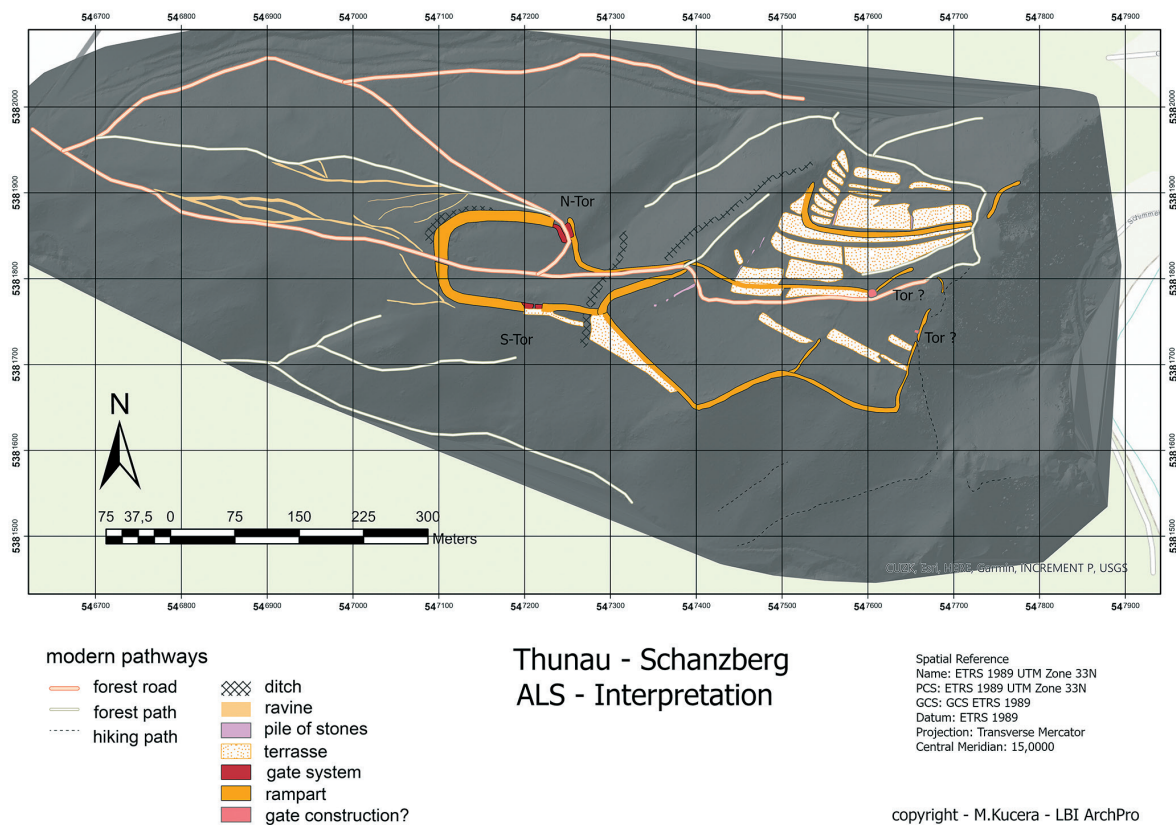
³⁶ Obenaus 2020, S. 227 f.

³⁷ This is undertaken by W. Breibert, Center for Museum Collections Management, University for Continuing Education Krems.

³⁸ Obenaus 2011; id. 2015; id. 2018; id. 2022a.

³⁹ Kanelutti 1990.

⁴⁰ Herold 2011, p. 524.



Sl. 9. Interpretacija podataka zračnog laserskog skeniranja nadopunjena rezultatima dvaju terenskih istraživanja (M. Kucra, Institut Ludwig Boltzmann za arheološku prospekciju i virtualnu arheologiju)

Fig. 9 Interpretation of the Airborne Laser Scanning data considering also two field surveys. (M. Kucra, Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology)

patološkom analizom otkriven je značajan broj patoloških promjena, pri čemu se posebno ističu one povezane s infekcijom tuberkuloze. Provedene su i molekularne genetske analize. Rezultati antropoloških analiza posebno su zanimljivi za cjelokupnu interpretaciju lokaliteta. U tom kontekstu testirana je hipoteza prema kojoj su se dvije (djelomično suvremene) skupine stanovništva, jedna pokopana na visinskom nalazištu, a druga u dolini, razlikovale po razini stresa i životnim uvjetima, dakle, aspektima koji su bili uvjetovani demografskim, društvenim i funkcionalnim čimbenicima. Ova razmatranja također uključuju rezultate izotopskih analiza. Analiza izotopa stroncija otkrila je iznimno visok udio pojedinaca koji nisu bili dio lokalnog stanovništva, što dodatno podupire interpretaciju lokaliteta kao središta moći u pograničnom području Franačkog Carstva.

P. Stadler⁴¹ as well as with dendrochronology, by O. Cichocki. The dendrochronological investigation yielded *termini post quem* dates from 834 to 894; as there was no waney edge present in any of the samples.⁴² ¹⁴C-dates for wood out of the rampart construction lie between 820 and 880.⁴³ On this basis a suggestion of two building phases has been made — one in the second half of the 9th century and one before (773–801 n. Chr.). The latter is in need of validation by further analyzes, as the sample does not originate directly from the construction.

From 2019 to 2021 a project aimed to further investigate the structures on and around the Schanzberg by geophysical prospection and remote sensing. The combination of airborne and terrestrial laser scanning as well as ground penetrating radar gave insight into the courses of pathways, ramparts and

⁴¹ Stadler et al. 1998–99.

⁴² Cichocki 1989–1999; see also Cichocki 2018.

⁴³ Stadler et al. 1998–1999; see also Stadler et al. 2000, p. 32.



Sl. 10. Rekonstrukcija južnih vrata i obližnjih kratkih dijelova bedema na Schanze u Thunauu (E. Nowotny)

Fig. 10 Reconstruction of the southern gate and adjacent short sections of the rampart on the Schanze of Thunau (E. Nowotny)

Turistička namjena

U sklopu projekta kulturnog parka Kamptala, na Schanzbergu je uređena planinarska staza s objašnjenjima uz samu stazu. Najistaknutiji dio staze je rekonstrukcija južnih vrata i obližnjih kratkih dijelova bedema na Schanzeu (sl. 10) s drvenom, dvokatnom kulom obloženom granulitnim pločama koja je smještena između dijelova bedema.

Između 2018. i 2022. godine proveden je Interreg projekt pod nazivom I-CULT (Internationale Kulturplattform; ATCZ59).⁴⁸ Jedan od ciljeva pro-



Sl. 11. Prezentacija nalaza iz naselja Thunaua u dolini na izložbi o životu i gradnji u srednjem vijeku, muzej MAMUZ, Asparn, 2020. (foto: E. Nowotny / B. Schuller)

Fig. 11 Presentation of finds of the valley settlement of Thunau in an exhibition about living and building in the Middle Ages in MAMUZ Asparn 2020 (picture: E. Nowotny/B. Schuller).

trenches; furthermore other possible gates have been localised in the eastern part of the Schanzberg.⁴⁴

The more than 370 individuals are evaluated in the Anthropology Department of the Natural History Museum in Vienna by a team led by M. Teschler-Nicola. There have been detailed⁴⁵ as well as overview publications⁴⁶ and academic theses⁴⁷ conducted, and the results will be presented in monographic form in the foreseeable future.

The paleopathological analysis was able to reveal a large number of pathological alterations, whereby especially those associated with a tuberculosis infection are to be highlighted. Molecular genetic analyzes were also conducted. The results of the anthropological analyses are particularly interesting regarding an overall interpretation of the site. In this context the hypothesis is tested that the two (partly contemporary) population groups buried on the hilltop site and in the valley differed in terms

⁴⁴ Kucera, Obenaus, Ruß, Neubauer 2021.

⁴⁵ Teschler-Nicola et al. 1994; Gangl 2014; Nittmann, Teschler-Nicola 2014; Teschler-Nicola et al. 2015; Prohaska et al. (in preparation); Rumpelmayr et al. (in preparation).

⁴⁶ Teschler-Nicola et al. 2018.

⁴⁷ Rumpelmayr 2011; Pany-Kucera 2015.

⁴⁸ Nowotny 2020b.

jekta bila je organizacija izložbe o svakodnevnom životu i gradnji u srednjem vijeku, a održala se u Muzeju MAMUZ-u u Asparnu (sl. 11). Znanstveni rad, na temelju kojeg je izložba realizirana, uključivao je i istraživanje nalaza i otkrića iz naselja Thunaua u dolini.

of stress levels and living conditions; aspects that were depending on demographic, social and functional conditions. The considerations also include results of isotope analyses. The strontium isotope analysis revealed an extraordinarily high proportion of non-local individuals underlining the overall interpretation of the site as a center of power in the border area of the Frankish Empire.

Touristic use

In the framework of the culture parc Kamptal project a hiking path with explanations was implemented on the Schanzberg. Its highlight is the reconstruction of the southern gate and adjacent short sections of the rampart on the Schanze (Fig. 10), showing a wooden two storey tower between the flanks of the ramparts, being faced with granulate slabs.

In the years 2018 to 2022 an Interreg-Project was conducted, named I-CULT (Internationale Kulturplattform; ATCZ59)⁴⁸. One of the aims was an exhibition about living and building in the middle Ages in MAMUZ Asparn (Fig. 11). The scientific work that led to the exhibition comprised among others the study of the finds and findings of the valley settlement of Thunau.

⁴⁸ Nowotny 2020b.

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