4th International Conference of Mediaeval Archaeology
4. međunarodni znanstveni skup srednjovjekovne arheologije

FORTIFICATIONS, DEFENCE SYSTEMS, STRUCTURES AND FEATURES IN THE PAST

FORTIFIKACIJE, OBRAMBENI SUSTAVI I STRUKTURE U PROŠLOSTI

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4th International Scientific Conference of Mediaeval Archaeology

of the Institute of Archaeology

FORTIFICATIONS, DEFENCE SYSTEMS, STRUCTURES AND FEATURES IN THE PAST

Programme

4. međunarodni znanstveni skup srednjovjekovne arheologije

Instituta za arheologiju

FORTIFIKACIJE, OBRAMBENI SUSTAVI I STRUKTURE U PROŠLOSTI

Program

Wednesday, 7th June 2017 HALL A		Wednesday, 7th June 2017 HALL B	
08:00-09:00	*Registration*		
09:00-09:20	**Opening of the conference, welcome speeches** Tatjana Tkalčec, Marko Dizdar, Jasna Turkalj		
09:20-10:00	**Introductory plenary lecture and discussion** **prof. dr. István Feld** Periods of castle architecture in the Hungarian Kingdom from the 11th through to the 17th century		
10:00-10:20	*coffee break*		
	Morning Session *(Session Chair: Tatjana Tkalčec)*		**Morning Session** *(Session Chair: Katarina Botić)*
10:20-10:40	**Gabriel Fusek, Michal Holeščák**: Hillfort in Divinka in NW Slovakia	10:20-10:40	**Silvija Pisk**: Castle Garić and *honor banatus*
10:40-11:00	**Petr Dresler, Marian Mazuch**: Two Great Moravian Fortifications Valy near Mikulčice and Pohansko near Břeclav. Similarity and Continuity	10:40-11:00	**Federico Bulfone Gransinigh**: Evolution of border fortifications. From the siege architecture to the modern one through the Serenissima and the Empire (XVI-XVIII century)
11:00-11:20	**Umberto Moscatelli**: Defensive systems and structures in Central Eastern Italy in Early Middle Ages: a preliminary approach	11:00-11:20	**Andrej Žmegač**: Dugo trajanje – primjer dalmatinskih mletačkih utvrda / The Long Term – the Example of Dalmatian Venetian Fortresses
11:20-11:40	**Petr Menšík, Milan Procházka**: Continuity and discontinuity of hilltop settlements in South Bohemia	11:20-11:40	**Maria Felicia Mennella**: Collections and drawings: the Renaissance of Venetian fortifications in the Mainland and Dalmatia

11:40-12:00	**Krešimir Filipec**: From the Middle Bronze Age to the Early Middle Ages – Rampart at the Hillfort in Lobor, Our Lady of the Mountain (Majka Božja Gorska)	11:40-12:00	**Darka Bilić**: The role of the Old Town Fortress in Sinj within the Venetian defense strategy in Dalmatia and its renovation after 1686
12:00-12:15	*discussion*	12:00-12:15	*discussion*
12:15-13:45	*lunch break*	12:15-13:45	*lunch break*
	First Afternoon Session *(Session Chair: Siniša Krznar)*		**First Afternoon Session** *(Session Chair: Katarina Botić)*
13:45-14:05	**Ordanče Petrov**: The Role of the Demir Kapija Gorge in the Defensive System of the Lower-Vardar Region during Medieval Times	13:45-14:05	**Igor Kulenović**: The Constitution of the *Gradina* as Hillfort: A Discourse Analysis
14:05-14:25	**Marinko Tomasović**: Kontinuitet i karakter prapovijesnih utvrda u antici i srednjem vijeku u makarskom i neretvanskom priobalju / Continuity and character of prehistorical fortifications in Antiquity and the Middle Ages in the Makarska and Neretva littoral	14:05-14:25	**Maja Krznarić Škrivanko, Boris Kratofil**: Defensive ditches in Sopot
14:25-14:45	**Stefano Cecamore**: Fortified villages in the central Apennines. Origin and development of defensive structures along the boundary line with the Papal States	14:25-14:45	**Snježana Karavanić, Daria Ložnjak Dizdar**: Traces of defence structures on Dubovac hill in the Late Bronze Age Communication Network on the southwestern edge of the Pannonian Plain
14:45-15:05	**Perica Špehar**: Reoccupation of the Late Antique Fortifications during the Middle Ages on the central Balkans	14:45-15:05	**Ivan Šuta**: Prapovijesne gradine i gomile na području Niskog i Brštanova / Prehistoric hillforts and burial mounds in the area of Nisko and Brštanovo
15:05-15:25	**Petar Parvanov**: Deromanizing the earthwork system in South Bačka	15:05-15:25	**Šime Vrkić, Neda Kulenović Ocelić**: Prehistoric Hillforts along Zrmanja and Krupa River Canyons

15:25-15:40	*discussion*	15:25-15:40	*discussion*
15:40-16:00	*coffee break*	15:40-16:00	*coffee break*
	Second Afternoon Session *(Session Chair: Juraj Belaj)*		**Second Afternoon Session** *(Session Chair: Daria Ložnjak Dizdar)*
16:00-16:20	**Marija Marić**: Kasnoantička utvrđenja severnog dela imperijalnog domena *Metalla Dardanica* / Late Roman fortifications of the northern part of the *Metalla Dardanica* imperial domain	16:00-16:20	**Ivo Fadić**, **Berislav Štefanac**: Željeznodobni bedem Aserije / The Iron Age wall of Asseria
16:20-16:40	**Ana Azinović Bebek, Petar Sekulić**: Late Antiquity Hillfort Crkvišće Bukovlje	16:20-16:40	**Branko Mušič, Matija Črešnar, Barbara Horn**: Innovative approaches for understanding Iron Age fortifications. Emphasize on 2D and 3D Subsurface Models in the Light of Electrical Resistivity Tomography
16:40-17:00	**Vladimir Sokol**: Kuzelin – kasnoantički kastrum i prapovijesni opidum **/** Kuzelin – Late Antique *castrum* and Prehistoric *oppidum*	16:40-17:00	**Roman Krivanek**: Fortified sites in Bohemian archaeology from the view of application of non-destructive geophysical methods
17:00-17:20	**Marija Buzov**: Fortifikacije i obrambeni sustavi u Crnoj Gori / Fortifications and defence systems in Montenegro	17:00-17:20	**Bo Nissen Knudsen**: Uncovering Lost Danish Castles: Toponomastics, archaeology, history and geophysics – assisted by moles
17:20-17:40	**Krešimir Regan**: Kninske utvrde / The fortifications of Knin	17:20-17:40	**Bruno Škreblin:** The fortification system of Gradec (Zagreb) in medieval period
17:40-17:55	*discussion*	17:40-17:55	*discussion*
19:00	**Exhibition opening** *: Srednjovjekovna fortifikacijska arhitektura - strukturne odrednice (materijal kamen i opeke) / Mediaeval fortification architecture – structure determination (material stone and bricks)* **authors***: Ratko Ivanušec, dr. sc. Zorislav Horvat* **place***: Archaeological museum in Zagreb, Trg Nikole Šubića Zrinskog 19, Zagreb*		

Thursday, 8th June 2017 HALL A		Thursday, 8th June 2017 HALL B	
08:00-09:00	*Registration*		
First Morning Session *(Session Chair: Anita Dugonjić)*		**First Morning Session** *(Session Chair: Ivana Ožanić Roguljić)*	
9:00-9:20	**Josip Višnjić**: TURNINA (*TORRE DI BORASO*) - Carolingian period fortress (?) and high medieval keep	9:00-9:20	**Matthias Grebien**: The land wall of Side in context of fortification systems in Asia Minor
9:20-9:40	**Naďa Profantová**: Early mediaeval fortification in Klecany, Middle Bohemia	9:20-9:40	**Hrvoje Vulić**: Ramparts of Iove – What defended the Roman Cibalae?
9:40-10:00	**Zsolt Csók**: The early meadieval fortifications of north-western Transylvania between research and nationalist mythology	9:40-10:00	**Slavica Filipović, Vladimir Kusik**: Fortifikacijski sustav Murse / Fortification system of Mursa
10:00-10:20	**Dejan Radičević**: Utvrđenja na vizantijsko-ugarskoj dunavskoj granici 11-12. stoleća / Fortifications on the Byzantine-Hungarian Danube border in the 11th and 12th centuries	10:00-10:20	**Gábor Bertók**: Iovia – a fortified Roman settlement in the centre of Pannonia
10:20-10:40	**Andrej Janeš**: A Phantom Menace: did the Mongol invasion really influence the stone castle building in medieval Slavonia	10:20-10:40	**Galina Trebelova**: Great Abkhazian (Kelasur) wall and the problem of localization Apsilii borders

10:40-10:55	*discussion*	10:40-10:55	*discussion*
10:55-11:15	*coffee break*		*coffee break*
	Second Morning Session *(Session Chair: Siniša Krznar)*		**Second Morning Session** *(Session Chair: Ivana Ožanić Roguljić)*
11:15-11:35	**Gergely Buzás, Adrián Berta**: Castle constructions by private landholders between the mid-14th and mid-15th centuries in Hungary	11:15-11:35	**Krešimir Mijić**: Bedemi i gradska vrata antičkog ladera/ City walls and City Gates of Ancient Iadera
11:35-11:55	**Boris Yanishevskiy**: The protection system of the road from Moscow to Smolensk in 14th – 15th centuries	11:35-11:55	**Berislav Štefanac**: Kasnoantičke fortifikacije na sjeveroistočnoj strani zadarskog poluotoka / Late antique fortifications on the north-eastern side of the Zadar peninsula
11:55-12:15	**Claudio Mazzanti**: The rediscover of a Italian fortification: the Cantelmos Castle in Bussi sul Tirino	11:55-12:15	**David Štrmelj, Dejan Filipčić**: Spolije antičke provenijencije kao građevinski element zadarskih bedema i fortifikacija / Spoils of ancient provenance as a construction element of Zadar walls and fortifications
12:15-12:30	*discussion*	12:15-12:30	*discussion*
12:30-13:00	***Poster Session***		
12:30-13:00	***Exhibition of photographs by Darko Antolković: Encounters with fortifications***		
13:00-14:30	*lunch break*	13:00-14:30	*lunch break*
	First Afternoon Session *(Session Chair: Marija Karbić)*		**First Afternoon Session** *(Session Chair: Tajana Sekelj Ivančan)*
14:30-14:50	**Piotr Lasek**: Castles in Mazovia in the fifteenth and sixteenth century. Features of defence	14:30-14:50	**Dejan Crnčević**: Kule srednjovjekovnog utvrđenog grada Smedereva. Oblici, kontekst, značenje / The towers of the fortified medieval town of Smederevo: forms, context, meaning

14:50-15:10	**Zorislav Horvat**: Građevni (arhitektonski) elementi obrane u srednjovjekovnim utvrdama kontinentalne Hrvatske: strijelnice, puškarnice, kruništa i braništa / Defensive building (architectural) elements of medieval forts in continental Croatia: arrow slits, gun loops, crenellations and battlements	14:50-15:10	**Željko Peković, Kristina Babić**: Obrambeni sustavi Vrata od Pila u Dubrovniku / Defensive systems of the Pile Gate in Dubrovnik
15:10-15:30	**Milan Procházka**: Transformation of fortification systems in the late middle ages at the border of today's Western Bosnia and Croatia	15:10-15:30	**Hrvoje Manenica**: Utvrda Gradina – Osridak, tri faze utvrđenog platoa / The fort Gradina - Osridak, three phases of a fortified plateau
15:30-15:50	**Joško Zaninović, Antonia Tomić**: Utvrde uz Krku i Čikolu: odnos srednjovjekovnih struktura i osmanlijskih nadogradnji / Fortresses by Krka and Čikola Rivers: Interaction between Medieval and Ottoman structures	15:30-15:50	**Lejla Bečar, Adisa Lepić**: Srednjovjekovna vojna utvrda Čajangrad / Medieval Military Fortress Čajangrad
15:50-16:10	**Adrián Berta**: Excavations on Dombóvár Castle between 2014 and 2016	15:50-16:10	**Silvija Salajić**: Obrambeni sustavi srednjovjekovne nizinske utvrde u Virovitici i proces njezine revitalizacije / The Defence Systems of the Mediaeval Lowland Fortress of Virovitica and its Revitalisation Process
16:10-16:25	*discussion*	16:10-16:25	*discussion*
16:25-16:45	*coffee break*	16:25-16:45	*coffee break*
	Second Afternoon Session *(Session Chair: Tatjana Tkalčec)*		**Second Afternoon Session** *(Session Chair: Tajana Sekelj Ivančan)*
16:45-17:05	**Szabolcs Nagy**: Defensive features and defensive purpose at the castles of Nicholas of Ilok. A mid-fifteenth-century case study	16:45-17:05	**Palma Karković Takalić, Petra Predoević Zadković**: Kasnoantičke i srednjovjekovne fortifikacije grada Rijeke, stanje istraživanja i nove smjernice / Late Antique and Medieval Fortifications of the City of Rijeka: The Present State of Research and New Guidelines

17:05-17:25	**Duško Čikara**: Jednoprostorne kurije u kontekstu obrambene arhitekture i pretpostavka za genezu velikaških kaštela 16. stoljeća u sjevernoj Hrvatskoj / Single-room manor houses (curiæ) in the context of defensive architecture and their presumed role in the genesis of High Gentry 16th century castella in Northern Croatia	17:05-17:25	**Vedrana Jović Gazić**: (Dis)kontinuitet obrambenog perimetra u gradovima antičko-srednjovjekovnog porijekla na istočnoj obali Jadrana – prednosti i nedostatci / (Dis)continuity of the defense perimeter in the eastern Adriatic cities of Ancient-Medieval origin - advantages and disadvantages
17:25-17:45	**Ivana Škiljan**: Fortification structures of Veliki Tabor – From late medieval fortress to renaissance castle	17:25-17:45	**Ratko Vučetić, Ivana Haničar Buljan, Lovorka Štimac-Dedić**: Gradske utvrde – primjer Varaždina / City fortifications – the example of Varaždin
17:45-18:05	**Péter Levente Szőcs**: From fortress to residence. The fortifications of Ardud / Erdőd Castle and their fate during the 18th century rebuilding	17:45-18:05	**Ivana Peškan, Vesna Pascuttini – Juraga**: Obrambena arhitektura na varaždinskom području kao jedna od okosnica oblikovanja kulturnog krajolika / Defensive architecture in Varaždin area as one of the backbones of the formation of the cultural landscape
18:05-18:20	*discussion*	18:05-18:20	*discussion*

Friday, 9th June 2017 HALL A		Friday, 9th June 2017 HALL B	
Morning Session *(Session Chair: Siniša Krznar)*		**Morning Session** *(Session Chair: Juraj Belaj)*	
9:00-9:20	**Erdal Eser:** A 13th century Anatolian defence structure: Divriği Castle	9:00-9:20	**Vladimir Peter Goss**: Some Models of Early Post-Migration Fortifications in Pannonian Croatia. Very Preliminary Considerations
9:20-9:40	**Sebastian Belbe**: Fortifications of a private castle during the 13th century. Case study of the castle of Tămăşeni / Tamásváralja	9:20-9:40	**Antonio Grgić**: The palimpsest of fortification systems on the Northern Croatian Limes: from medieval fortifications to nowadays steel fence with razor blades
9:40-10:00	**Debora Ferreri, Enrico Cirelli**: The defenses of Rontana's castle (10th-16th c.)	9:40-10:00	**Uroš Košir**: Defending the Empire: Austro-Hungarian Great War defence systems in Slovenia
10:00-10:20	**Stephen Pow**: The Location Problem with Hungary's Thirteenth Century Castle-Building Project in the Aftermath of the Mongol Invasion (1241-1242)	10:00-10:20	**David Štrmelj, Dejan Filipčić**: Defanzivne vojne adaptacije u zadarskim bedemima za vrijeme talijanske vladavine / Defensive military adaptations in the city walls of Zadar during Italian rule
10:20-10:40	**Mária Vargha**: In the Shadow of Power. The Impact of Castles in the Development of the Local Church System in the 11-12th c. in Hungary	10:20-10:35	*discussion*
10:40-10:55	*discussion*		

10:55-11:10	Closing of the conference **Tatjana Tkalčec**	
11:15	*Closing Meeting Gathering and Refreshments*	
12:30-13:30	*Visiting the Zagreb City Museum (Opatička 20)*	
14:00 cca 19:00	*Excursion: Castle Medvedgrad (departure: Ilirski trg, arrival: vicinity of The Ban Jelačić Square)*	

Abstracts

LECTURES

Wednesday, 7 th June 2017
HALL A, Morning session, 9:20-10:00

Introductory plenary lecture

István Feld

Periods of castle architecture in the Hungarian Kingdom from the 11th through to the 17th century

The lecture will take an attempt to outline the main characteristics of the principal periods in seven centuries of castle architecture of the Hungarian Kingdom, established in the Carpathian Basin around 1000. Although the Kingdom provides scholarly challenge for historians, art historians and archaeologists of eight countries, the lecture will focus principally on the recent results of the Hungarian research. While the 11-12th centuries can be characterized by the large-sized royal fortifications mainly with earth-and-wood ramparts, built primarily as the centres of the Kingdom's administative units, in the 13th century – beside the royal stone built castles – numerous private castles were also erected, typically of small size. Most of the latters were abandoned after the game of thrones around 1300, and thereafter imposing, more or less regular castles were built primarily for the kings of the Angevin dynasty. These served as models for the royal and aristocratic dwellings of the age of Sigismund of Luxembourg (1387-1437) which were usually erected on easily approachable sites. Later, from the mid-fifteenth century more and more former castles of high-altitude were also rebuilt and enlarged, however, some of these served only as domanial centres of their lords. The innovations of the military architecture correlating with the spread of firearms were adopted only sporadically preceding the Ottoman campaigns after the battle of Mohács (1526). Even so, from the mid-sixteenth century the fortress system built by the Habsburg monarchs – which defended the unconquered, mainly northern part of the Kingdom – was established under the direction of Italian military architects.

Wednesday, 7 th June 2017
HALL A, Morning Session, 10:20-12:15

Gabriel Fusek, Michal Holeščák

Hillfort in Divinka in NW Slovakia

Hillfort in Divinka is known in literature since 18th century. First archaeological excavations were concluded in 70´of 20th century. Since 2013, modern systematic research of fortification system is concluded. Hillfort was built during the bronze age (Lusatian Culture), after which was settled in The Iron Age (Púchov Culture) and at last by slavic population in Great Moravian Period (9th–10th century).

Site consists of three separated parts: peak part with acropolis and suburbium, all of them fortified by own walls. Whole complex occupies area of 12 hectars. Excavations were concluded in fourth places with focus on wood-earth ramparts. In one case, unique barow-like object was excavated, which presumably served as a gate with tower.

Petr Dresler, Marian Mazuch

Two Great Moravian Fortifications Valy near Mikulčice and Pohansko near Břeclav. Similarity and Continuity

Multiple common features have been discovered by the means of a long term excavation at the two Great Moravian sites, Mikulčice - "Valy" and Pohansko near Břeclav, located 16 km apart each other. One of the main common traits is the way of the rampart construction and the use of the same building material. Both fortifications were built using stone as the most important construction element, which is not naturally present at neither of the two sites and therefore must have been transported there from the greater distance. The basic type of the Great Moravian fortification used at both sites is the so called "shell structure" which is considered to be typical for the very centre of the Great Moravian region. In the case of Valy near Mikulčice we see that builders had to solve the lack of building space and ensure the stability of the front of the rampart by a unique way of using anti-erosion construction. The builders of Pohansko did not have to deal with these problems. The construction of this fortification was generously designed and realized in a sufficient distance from critical areas. According to the latest findings the construction of Pohansko and its fortification was realized later than at Mikulčice. While constructing the fortification of Pohansko the builders have taken an advantage of the formerly built rampart at Mikulčice and therefore have been able to build significantly larger one even more economically there. Alongside

the technological connection of both sites, we assume that the construction of Pohansko fortification was intended, among other things, to protect the access to Mikulčice from the direction of the Danube region wherefrom the Frankish military contingents were frequently arriving. The existence of the fortified centre at Pohansko provided not only the control of the Dyje river crossing, but also the settlement for tens to hundreds of warriors inside the wall who were able to protect the important power centre in Mikulčice as well.

Umberto Moscatelli

Defensive systems and structures in Central Eastern Italy in Early Middle Ages: a preliminary approach

The theme of the development of systems and defensive structures in Early Middle Ages and Middle Ages has never been appreciated by archaeologists in this side of Italy. Some recent scientific contributions pay more attention on history or on the walls building techniques.

Even if the lack of archaeological excavation makes it difficult the approach to this topic, a comparative analysis of documentary sources and material evidences in fortified contexts pave the way to some interesting remarks.

The written sources of early Middle Ages provide a discontinuous patchwork mostly related to the events that accompanied the growth of ecclesiastical power (Abbeys and Roman Church). Sometimes we have only the factual reference to some fortification event, like in the case of the monks of the Farfa Abbey, when they fecerunt castellum to defend themselves against Saracen attacks. Sometimes, on the contrary, we find specific references to the building material of the fortification.

The archaeological sources consist of earthworks or remains of castle (more or less ruined...), usually reflecting building projects dating back to the Late Middle Ages, but often put in the same places where the oldest defenses had been raised.

Based on those data, the Author seeks to identify the tendencies in the topographical choices of the earliest fortifications, as well as in the technical solutions chosen.

Petr Menšík, Milan Procházka

Continuity and discontinuity of hilltop settlements in South Bohemia

The South Bohemian Region belongs to regions where many hilltop settlements had been built since the Early Stone Age. However, the first fortified systems were built in the Late Bronze Age as hilltops, mountain peaks and promontories were fortified by complex systems of ramparts and ditches. This phenomenon

thereafter continued into younger prehistoric periods, especially the Early Iron Age, resulting in hilltops foundation in the Early Medieval Period since the 9th century with frequent continuity in the form of castles and manor houses in the Medieval and Modern Period. The paper not only tries to summarize and survey the use of hilltop sites and the continuity of settlement, but it tries to make their classification, characteristics and function considering practical, social and symbolical function which can be detected in both prehistoric (sophisticated fortifications with no practical use, depositing) and medieval (power demonstration, a question of defence) heritage. The overall development is therefore set in the framework of Central European development.

Krešimir Filipec

From the Middle Bronze Age to the Early Middle Ages – Rampart at the Hillfort in Lobor, Our Lady of the Mountain (Majka Božja Gorska)

During the archaeological excavations at the hillfort in Lobor, Majka Božja Gorska (Krapina-Zagorje County), the vestiges of a settlement have been found. The settlement's oldest layers are marked by the Litzen pottery. The layers discovered at various positions belong to the late Tumulus culture, the earlier and late Urnfield culture, the later phase of the Early Iron Age and the Late Iron Age, and the early Roman Age. Archaeological layers, structures and objects had increased in number throughout the Antiquity until the end of the 6th century. The position was resettled in the 8th century and it has been used until the present day. Already in the Late Bronze Age, the hillfort, which was protected by the very nature of its position with almost vertical cliffs on two sides, was fortified with a rampart made of well-packed clay, built on northern and northwestern less defendable sides. Following the first Bronze Age phase in which the oldest earthen rampart was defined, there was a major renovation in the early Iron Age and the rampart was raised. At that time, the whole hillfort was divided in two parts, the upper position was separated, shaped like a castle and set apart from the suburb. Within the structure of the earthen rampart made of refined and well-packed clay, layers of baked earth and kind of cases with baked earth trimmed with rubble stone have been registered. Above the earthen part, a wooden fence was erected, of which only the pillar pits have remained. In the late Antiquity, a stone wall made of rubble stone was built on top of the Late Iron Age earthen rampart that had been abandoned at that point. During the Migration Period, at the time when the Slavs captured the fortification in the late 6th century, the whole hillfort, including the wall, was destroyed in a great fire. In the 8th or 9th centuries a palisade was erected on top and on the outside of the late Antique built structure that had been heavily damaged in the previous fire. Of the palisade, too, only large pillar pits have remained. In the 8th and 9th centuries, Lobor became one of the important ecclesiastical and probably political centers of

the Duchy of Lower Pannonia. In the late 11th or the early 12th centuries at the latest, the wall was no longer in use, but it protected, with its mass, the church and houses from strong northern and northeastern winds. During the WWII, the hillfort was again turned into a military stronghold and military tranches were dug precisely on top of the wall, which considerably damaged the earlier structures.

Wednesday, 7 th June 2017

HALL B, Morning Session, 10:20-12:15

Silvija Pisk

Castle Garić and *honor banatus*

Garićgrad is one of older medieval castles in Croatia. It is located on the northern slopes of the Moslovačka gora range above the village of Podgarić. The first mention of the toponym „Garić" that can be found in the sources is from 1163, in a royal decree by Stephen II, the King of Hungary and Croatia. The exact year of its construction and the builder remain unknown, but there are some hints that the castle of Garić, located by the big medieval road existed at the beginning of the 13th century. During its 300 years of active service Garić changed owners many times, but they were mostly kings and queens of Hungary and Croatia, bans of Slavonia and bishops of Zagreb. It was destroyed in an Ottoman attack in mid-16th century and was never rebuilt.

Honor banatus is a common term used for rights, possessions and revenues related to the title of Ban. By coming into power, every Ban, the highest state official in medieval Croatia, received, apart from a certain social status and various rights, several castles and related properties. Since the 14th century and the reign of Ban Mikac, *honor banatus* of Slavonian Bans include Garić castles (along with Veliki Kalnik, Mali Kalnik, Velika and Koprivnica). *Honor banatus* existed until early 15th century when it was annulled by King Sigismund of Luxembourg. Unfortunately, the institution of Honor banatus was never thoroughly researched in Croatian historiography and its impact on mentioned castles remains quite a mystery.

Federico Bulfone Gransinigh

Evolution of border fortifications. From the siege architecture to the modern one through the Serenissima and the Empire (XVI-XVIII century)

Such intervention underlined the diversities and points of contact between two political and administrative realities such as those of Austria and Venice, analysing the approach supported by the two regarding the concept of Borders in which there were fortified modern architectures and war landscapes. Innovating geometric shapes, in respect to those of the XIII-XIV century, were proposed by Michele Sanmicheli and by the Vintana family's architects. The territories under discussion are the present region of Friuli Venezia Giulia and *Innerösterreich*.
When Francesco Maria della Rovere's was nominated Governor of the general militia in 1523 and later General Captain of the Serenissima, a unitary defensive plan of the Ventian territory was conceived and outlined in 1532. After a few decades, the Vintana and imperial architects became an emblematic example to understand how the Hapsburgs would integrate in the modernizing landscape of shapes, materials and fortification concepts.
It was understood therefore the concept of a Border; such as a "fortified" geographic place of which they tried to give a complete vision over two centuries. The rebirth of the *Militärgrenze* dates back to the beginning of 1435, due to the frequent Turkish incursions. These first approaches in the territorial organization were concreteness in particular after the battle of Mohač in 1526.
The interventions underlined, through some examples, the diversities and points of contact between two political and administrative realities such as those of Austria and Venice, analysing the approach supported by the two regarding the concept of borders and the contamination of shapes and projects of fortified modern architecture.

Andrej Žmegač

Dugo trajanje – primjer dalmatinskih mletačkih utvrda / The Long Term – the Example of Dalmatian Venetian Fortresses

It is an interesting fact that some fortifications retain their function and importance for many centuries. Outstanding examples of this phenomenon in Dalmatia are Knin and Klis, which were governed by the Venetian Republic for a significant part of their history. These fortresses date back at least to the early Middle Ages, and were able to maintain their military purpose until the 20th century (Klis). The question is how this role could be kept despite the incredible development of weapons in that long period. Obviously certain positions permanently remained of strategic interest, and fortification engineering strived to make them defensively effective by adaptation of the standard forms. For example, after the withdrawal of the Turks in the Morean war an optimal, spacious new fortification of Knin was intended, but not accomplished; instead, the fortress on the slopes of the Spas

hill was modernised, thus becoming a first-range Venetian fortress. In addition to the aforementioned adapted bastion structures, in Venetian fortresses elements inherited from the Middle Ages (faussebraye, tenaille) can be found, now used in modern and original ways. Apart from the two elevated fortresses (Knin, Klis), there is the interesting example of Drniš, where on the local plateau a bastion belt was erected in addition to an existing older fortress. The excavations carried out on Dalmatian fortresses (Šibenik, Drniš) should also be mentioned here, whose results did not pertain only to the archaeological periods, but also brought to light structures from earlier phases of the bastion fortresses themselves.

Maria Felicia Mennella

Collections and drawings: the Renaissance of Venetian fortifications in the Mainland and Dalmatia

The detailed planimetric restitution of the fortification of a city, often accompanied by precise elevation profiles system, the graphical representation of a detail and attention paid to the representation of elements outside the perimeter wall: the main access roads, rivers, canals, the mountains, the authors show how the designs were guided in the reading of the urban phenomenon as essentially military considerations and objectives. In other words, the collections of drawings do not contain the work of artists committed to invent symbolic iconography of the city, but in them is documented the relentless work of collecting and conduct design by military engineers in the service of the Serenissima Republic, aimed the creation and updating of equipment fortifiers. Through analysis and comparison, new collections of drawings belonging to the custody of Libraries and Archives from Veneto, the main Venetian fortifications in Dalmatia among which, Zadar, Sibenik, Novegradi, Sign, and Dernis and major fortifications in the Mainland, will be realized a complete picture of all the elements that characterize these fortifications, study that will allow us to clarify the dating chronological and the technical solutions adopted in the various drawings and identify interesting innovations both at the organizational level of the defensive structures and the identification of their authors.

Darka Bilić

The role of the Old Town Fortress in Sinj within the Venetian defense strategy in Dalmatia and its renovation after 1686

Strategically positioned along the road connecting the Dalmatian coast to its hinterland, the fortress of Sinj lasted as an inhabited stronghold since ancient times until the end of the 18th century. The fortress developed during the Middle Ages into an urban center and during the Ottoman rule became the administrative

center of its surrounding area. The fortress of Sinj fell under the Venetian rule in 1686 and then began its intensive renovation. Due to its position along the border with the Ottoman Empire, it had outstanding military-strategic importance for the Venetian Republic. After the fall of the Venetian Republic, the already dilapidated fortress was demolished and abandoned by the last resident during the 19th century. Its remains were the subject of rescue excavations that occurred from 2004 to 2015.

The starting point of this presentation will focus on the strategic role attributed to the fortress of Sinj by contemporary military experts and government officials, during the establishment of the Dalmatian defense system at the end of the 17th and at the beginning of the 18th century. The analysis and comparison of the documents from the State Archive in Zadar and contemporary drawings will also allow the reconstruction of the dynamic of military and political dialogue in Dalmatia during that period and the role of its contributors. The goal of this study is to improve our knowledge of the Venetian defense strategy in Dalmatia and its impact on the modernization of fortresses along the Venetian-Ottoman borderline.

Wednesday, 7 th June 2017

HALL A, First Afternoon Session, 13:45-15:40

Ordanče Petrov

The Role of the Demir Kapija Gorge in the Defensive System of the Lower-Vardar Region during Medieval Times

The Demir Kapija Gorge is a unique natural and cultural complex that divides the Vardar valley into middle and lower Vardar Region. The Gorge is a natural border between the Mediterranean world and Continental Europe that guards the Vardar route (*Via Axia*).

Along the Gorge, there are several fortresses that kept the security of the *Via Axia* and made the gorge almost insurmountable. The strategic position on the route makes this location very attractive even for the Attic citizens who settled the entrance of the Gorge as early as the 5th Century BC. The location and the taxes collected from the passing traders enabled a rapid progress and prosperity for the local population.

In the 4th Century BC on both sides of the Gorge two monumentally fortified

military bases were built. They were abandoned during the Celtic raids in the first quarter of the 3rd Century BC. During the turbulent 4th Century AD, these fortresses were renewed and even new ones were built on the both sides of the river. During this period at the site of Kale – Strezov Grad near v. Chelevec, a new fortress was built. This was the most important stronghold in the defensive system of the Demir Kapija Gorge in the period between the 5th Century AD till the Ottoman conquest of the Balkans at the end of the 14th and the beginning of the 15th Centuries.

In this paper, several fortresses along the Demir Kapija Gorge are presented. Also, their development from Hellenistic to Late Roman and Medieval fortifications and specifically their role in the overall system of defense of the Lower Vardar region during the Middle Ages are a matter of consideration.

Marinko Tomasović

Kontinuitet i karakter prapovijesnih utvrda u antici i srednjem vijeku u makarskom i neretvanskom priobalju / Continuity and character of prehistorical fortifications in Antiquity and the Middle Ages in the Makarska and Neretva littoral

The archaeological picture of the Makarska-Neretva area is supplemented with new cognitions. Historiographical understandings about fortifications and settlement nuclei inside them or nearby change also. The research done in Makarska offers a new view of Roman *Muccurum*, where, at St. Peter locality there was a refuge during the period of the Late Antiquity. The architecture dates the reactivation of the hill-fort starting from the 5th century, having considered the understandable lack of proof about its significant use from the period of the 1st – 4th century, i.e. the period of the existence of Muccurum at its foot. Still, the founding of St. Peter is deterimined to the Late Eneolithic, with an Illyric- Hellenic nucleus from the 3rd-1st century B.C. The line of the hill-fort wall coincides with the 17th century defensive wall, built on the foundations of one from the Late Antiquity. The sequence of fortifications, in which the true size of the Late Antique fort in relation to the old one is still unknown, refers also to Porphyrogennetos' castra of *Mokron* in the 10th century. The later nucleus of Makarska on the place of Roman Muccurum, just like the fort from the source from the 15th century, is examined theoretically. The position of the 16th century Ottoman walls affirms the fortification of the existing nucleus. The fortification doesn't show a clear sequence anywhere else. It is only assumed, by the appearance of the position, finds and necropoloses at the foot, but also by the position of the forts from the early modern period (Gradac). The forts by the Lower Neretva, known from the 14th and 15th century sources, are represented unequally, as well. Vratar and Osinj have preserved fortifications, in Brštanik they are reconstructed and in Koš they have been removed. With a wider base of the earlier settlement organization they refer to longer fortification continuity.

Stefano Cecamore

Fortified villages in the central Apennines. Origin and development of defensive structures along the boundary line with the Papal States

The morphological characteristics of the Apennine ridges in central Italy define a territory that is difficult to penetrate, hence affecting, since the earliest times, the possibility to set up resident and delimited villages delaying the establishment of real fortified structures until the fourth century BC.

The *oppida* and *castella*, mentioned in the sources of the Roman Era identifying villages with people originally from central Italy, were often placed in a strategic position and in visual contact with each other, defining a first control of the territory network that finds its complete form and evolves in a structured and easily recognizable system around the tenth-eleventh century.

After the fall of the Roman Empire there was found a solution for the difficult identification of the political and spatial layout and the lack of a central power defined topographically during the Norman dominion determining the areas of central Italy as the boundary between the southern kingdoms and the Papal States.

The numerous *castra* and fortified structures consequently destroyed and reinforced along the border with the *Patrimonium Sancti Petri* outline an enormous heritage of proof of the historical-architectural evolution of these border territories.

The study of the structures on elevation defines a constructive view which collects the traces of the main transformations of the fortified systems: from the *castral* enclosures in ruins, passing through the survived ones, although in a state of neglect and embedded in the complex urban systems, to the redefined structures re-examined with the Renaissance perspective and residence castles of the great Roman families.

Perica Špehar

Reoccupation of the Late Antique Fortifications during the Middle Ages on the central Balkans

After the withdraw of the Byzantine army from the Danubian limes in the first decades of the 7th century, the territory of the central Balkans was populated once again, this time by the Slavs and Bulgarians. Their first settlements differed from previous roman and byzantine primarily by the fact that newly arrived tribes didn`t realize the importance of fortifications. Therefor they inhabited outside the existing ramparts. After the Christianization in the third quarter of the 9th century Serbs and Bulgarians changed their way of life, alongside with their relation toward the fortifications. From that time onward the reoccupation of the earlier forts has begun, which finally resulted in the renovation and reconstruction of

the late antique ramparts. The reconstruction of ramparts differed from fort to fort, since some of them were restored, while some were erected *ex novo*. Because the population using them was not so numerous, the used fortified areas were reduced in size. The aim of this work is primarily to investigate the differences in appearances of the fortifications along the former Danubian limes and those in the hinterland of the central Balkans during the 10th and 11th century. Main examples through which those differences and similarities will be observed are Kostol and Veliki Gradac on the Danube, and Gamzigrad, Ras-Pazarište and Gradina on Vrsenice in the hinterland of the central Balkans.

Petar Parvanov

Deromanizing the earthwork system in South Bačka

In South Bačka, Vojvodina are known two defensive earthworks protecting the intersection of the Danube and Tisza rivers from the northwest. The attempts to understand them as remains of Sarmatian activity in the 4th century or include them in Panonian Roman defense system are problematic and inconclusive.

This presentation will reassess the available evidence and propose early medieval date for their construction. Understanding them as another phase in the military exploitation of the landscape will be further contextualized by analogies with the frontier defensive systems of the Danubian Khanate. A discussion on the significance of the sites as part of civil defense system will be presented.

Finally, possible historical interpretation will be commented regarding the political tensions between Franks, Avars and Bulgars in the early 9th century.

Wednesday, 7 th June 2017

HALL B, First Afternoon Session, 13:45-15:40

Igor Kulenović

The Constitution of the *Gradina* as Hillfort: A Discourse Analysis

The *gradina* are monumental structures built mostly on prominent positions. It appears that these structures were predominantly built during Bronze and Iron Age. The *gradina* are prehistoric building projects which left a significant mark on

the landscapes of the eastern Adriatic coast and its hinterland. This presentation will attempt to demonstrate that the interpretation of *gradina* sites is largely contingent upon the interpretative paradigmatic framework. The relationship between paradigmatic framework and interpretation works on several levels, from the very terminology used to describe such sites to the accounts of historical processes which were instrumental in building these structures. The main thesis of this presentation is that the designation of the *gradina* sites as hillforts and the like stems from the textual reality of suggested interpretations. To put it in another words, the *gradina* are described and interpreted predominantly in relation to posited culture-historical narrative of culture change rather than some empirical reality.

Maja Krznarić Škrivanko, Boris Kratofil

Defensive ditches in Sopot

The aim of this lecture is to present the results of systematic archaeological survey and geophysical survey of the site Sopot. Both of those methods revealed the complex system of defensive ditches. The settlement was enclosed by at least two circular ditches; one of which was partially excavated during the survey. It was six meters wide and three meters deep. Various smaller ditches that were part of a defensive fence have been excavated both inside and outside of the encircled area. Due to the expansion of the settlement, part of the ditch lost its primary function, and was used as housing area. Geophysical survey of nearly entire settlement revealed the existence of complex system of circular ditches that have enclosed the settlement. Two main ditches are clearly visible, of which the older and smaller one was partially excavated. It enclosed the area of 100 x 80 m. The bigger and younger ditch was discovered during geophysical survey, and it enclosed the area of 120 x 100 m.

Snježana Karavanić, Daria Ložnjak Dizdar

Traces of defence structures on Dubovac hill in the Late Bronze Age Communication Network on the southwestern edge of the Pannonian Plain

Traces of Late Bronze Age defence structures were found on Dubovac hill in Karlovac during a rescue excavation in 2009 and 2010. The preserved part of the fortifications consisted of burnt earth with traces of burnt wooden planks. Earthen ramparts were the usual type of Late Bronze Age fortifications on the southwestern edge of the Pannonian Plain. Several documented contemporary examples from the neighbouring area of Bela Krajina in Slovenia and from the Zagreb area testify about the collective knowledge of and the exchange of experiences in building Late Bronze Age defence systems.

The traces of Late Bronze Age defence structures on Dubovac were found under a medieval and 16th-century fortification, indicating the importance of the position above the interfluve of four rivers: Kupa, Korana, Mrežnica and Dobra. The fact that the same position was reused for habitation and defence systems in different periods is related to the landscape possibilities and communication routes. The location of today's Karlovac is the crossroads of several communication routes leading from the Carpathian Basin to the Caput Adria and from the Balkans to the the southeast Alps. These communication routes have been used for thousands of years, down to the present day.

The Late Bronze Age fortified settlement on Dubovac will be explained within the network of contemporary regional fortified settlements and with regard to its importance and role in the challenges of the time.

Ivan Šuta

Prapovijesne gradine i gomile na području Niskog i Brštanova / Prehistoric hillforts and burial mounds in the area of Nisko and Brštanovo

Brštanovo and Nisko villages are located about 15 km northwest from Split. Both are a part of the municipality of Klis. They share a border with municipality of Lećevica on the west and south and with municipality of Muć on the north. As in most parts of Dalmatian Hinterland, hamlets are located on the edge of small and enclosed karst field, an area of approximately 4 km^2.

Archaeological topography of this area is poorly known, as is for surrounding area. There are numerous remains of well preserved prehistoric hillforts and burial mounds in the area of these villages. In the past this area was primarily used for livestock breeding, which didn't require interventions in the environment, except near hamlets and in the carst field where the terrain was intensely terraced and cleared.

Several hillfort sites are registered in the area of these villages. Kulina hillfort and hillfort by the Šolići hamlet are the most prominent ones. Currently known hillforts and burial mounds will be further analysed in this paper. Results of new archaeological field surveys and analysis of aerial photos and available topographic maps will also be presented. The aim of this paper is to better understand how the prehistoric populations settled and exploited this area during later prehistoric periods by analysing the available topographic information.

Šime Vrkić, Neda Kulenović Ocelić

Prehistoric Hillforts along Zrmanja and Krupa River Canyons

The purpose of this paper is to present prehistoric hillfort sites situated along

Zrmanja and Krupa river canyons in north Dalmatia, Croatia. The analysis of available aerial and satellite photographs revealed previously unknown hillfort sites in the research area. A purposive field survey was conducted on newly discovered hillfort sites. Several previously recorded hillfort sites were eliminated as a result of the research. The resulting number of such sites in the research area is now roughly thirty. Surface finds were collected during filed survey at Berberova gradina site, Bilišani which was partially destroyed by anthropogenic activities. The finds recovered at this site will be presented.

The rescue archaeological excavations were conducted on one of the sites in the research area during the construction of Lika and Dalmatia gas pipeline system in 2010. The excavations were conducted on Gradina hillfort site in Muškovci. The site in question is one of the most monumental hillfort sites. It is placed between middle and lower Zrmanja river courses. The site is strategically placed at a river crossing. The results of the excavation will be presented and placed in the wider context of similar sites in the area.

Wednesday, 7 th June 2017

HALL A, Second Afternoon Session, 16:00-17:55

Marija Marić

Kasnoantička utvrđenja severnog dela imperijalnog domena *Metalla Dardanica* / Late Roman fortifications of the northern part of the *Metalla Dardanica* imperial domain

The formation of a mining domain in the Early Roman period of the Central Balkans, as territories under particular imperial control, was accompanied by a level of organisation within a landscape and the spatial planning of different site types. The Late Roman period was marked by a sharp economic shift in occupation from urban centres to those in rural areas, causing a substantial reorganization of the space and administrative organization of *teritoria meatllori*. The principal manifestation of this process was the development of *villae rusticae* and fortifications, whose spatial distribution follows a certain regularity. This regularity is thus explained using a model where a resource-rich territory is occupied and made up of a mine – a settlement (a *villa*) – a fortification.

This article examines the role of fortifications in the system of exploitation and processing of ores and relations with other structures within the landscape

(settlements, villas, roads, etc.) in the territory of the northern part of the Ibar river domain within the *Metalla Dardanica*. The study is carried out using the default tools from the program package ArcGIS 10.2. by forming and examining the zones of economic significance of the settlements. The analyses of most favorable routes relative to the cost, or cost distance analyses were undertaken, as well as viewshed analyses; supported by the material culture analyses carried out on the assemblages from fortifications, have triggered a set of research questions concerning the character of the relationship between settlements and defense structures with the organization of mining and metallurgy, as well as storing and redistribution of ore. This refers to the conditions for the construction and function of the 4th century fortifications within the imperial domain, which represents a new view of the defense system in the hinterland of the Limes.

Ana Azinović Bebek, Petar Sekulić

Late Antiquity Hillfort Crkvišće Bukovlje

Late antiquity hillfort Crkvišće Bukovlje has been excavated since 2012. Finds dated to the Copper Age, Late Bronze Age, Early Iron Age, Late Antiquity, Medieval and Post-medieval period were found during the archaeological excavations. The site is situated on a strategic position over the riverbend of Mrežnica and located on the plateau of irregular triangular shape that rises gently to the north. The dimensions of the plateau are 110m (south-west) x 80m (north-east) x 85m (west). To the west a steep slope naturally protects the site. In the vicinity of the site the existence of the ancient road Romula - Senia is assumed.

On the northern, highest part of the plateau the remains of the Late Antique single-nave church have been explored. The church has a semicircular shallow apse, and is dated in the period between the beginning of the 5th and the end of the 6th century, confirmed by the results of radiocarbon analysis of charcoal samples. The remains of two rectangular stone structures on the plateau were also excavated next to the south-western defensive wall. Their dimensions were 8 x 8 m and 8 x 5 m. One of the possible functions of these facilities would be accommodation for the roman garrison. Detailed field survey showed that the Late Antiquity hillfort had at least two towers at the eastern defense wall, and two probably in the southern corner and south-western corner.

Vladimir Sokol

Kuzelin – kasnoantički kastrum i prapovijesni opidum / Kuzelin – Late Antique *castrum* and Prehistoric *oppidum*

On the slopes of mountain Medvednica in northeast Zagreb the site of Kuzelin is

an example of multilayered site, which was occasionally settled since the Eneolithic and Bronze Ages. However, we can determine with certainty that its fortification began around the year 1000 BC, since the earlier phases of Urnfield culture. The whole surface area, on which were built settlements with housing pottery inventory, alongside rare finds of typologically differentiated metal artefacts, was colonized. A strong settlement with fort lasted until the beginning of early Iron Age, at the turn of eight to seventh century. With certainty Hallstatt period cannot be confirmed, yet it is possible that still only the beginnings of the period might present themselves. The renewal of Kuzelin as *oppidum*, with adjacent settlement, happened in the late Iron Age, namely with the Celts. The find of *dux* fibula type, but also other finds of fibulas and pendants, in addition to graffito pottery, present the renewal around the year 300 BC and, after the return of Celts from Greece, the renewal of life in middle and late La Tène period.

However, main renewal and fortification of Kuzelin began in Roman period, and lasted, with interruptions, until the sixth century. The conducted periodization shows four of its phases, out of which short-term final phase is attested by the find of early Avar straight arrow. A great find of numismatic finds in three major groups testify about three previous phases of renewal and usage of *castrum*, in addition to fortification of defence wall and rich finds of late-fourth-century *militaria*. Kuzelin therefore had important military and strategic role in this, most important, mountain pass of Medvednica, between Roman *Siscia* and *Poetovium*. In its base are discovered more ancient *villae rusticae*, *thermae* near the source of mineral water and pre-Christian sacral objects, which together form everyday life of *castrum* in peaceful periods.

Marija Buzov

Fortifikacije i obrambeni sustavi u Crnoj Gori / Fortifications and defence systems in Montenegro

First fortified urban agglomerations on the territory of today's Montenegro are Illyrian hill forts (gradina). The term "gradina" is given to the fortified Illyrian agglomerations which were extended or repaired in antiquity or which were mentioned in antique sources and Roman itineraries. So, it is about the defence of landscape, about similarities and differences, about changes in the ways defence systems of the forts, towns and regions were organized in similar and different spatial context. Was a natural position used for fort construction, how were fortification architectural elements organized in order to provide efficient, permanent or temporary defence of the region, how were the towns defended? The presentation will be dedicated to the system of defence and the possible recognition of patterns on the territory of Montenegro in antiquity. Special attention will be dedicated to the archaeological finds from towns – Risan *(Risinium)*, Kotor *(Acruvium)*, Budva *(Buthua)*, Ulcinj *(Olcinium*), Duklja *(Doclea)* and Medun *(Meteon)*.

Krešimir Regan

Kninske utvrde / The fortifications of Knin

Due to its exceptional geostrategic position on the right bank of the river Krka in northern Dalmatia, on the crossroads between continental Croatia and the Adriatic coast, the area of present-day Knin was, through the centuries, fortified with numerous defensive complexes and structures. The first one was built in prehistory on the northern side of the hill Spas, which rises steeply above the present-day settlement, while the last one was erected by the Italian occupying forces during World War II on the Kapitul locality near Knin.

Although some of the fortifications of Knin were individually presented in earlier research, especially the famous Baroque fortress, in this report we want to present them chronologically, describe them and point out their different manifestations and changes in the organisation of defensive structures and systems through time, with a comment on the sources of those changes, as well as point out their influence on the urban formation of Knin.

Wednesday, 7 th June 2017

HALL B, Second Afternoon Session, 16:00-17:55

Ivo Fadić, Berislav Štefanac

Željeznodobni bedem Aserije / The Iron Age wall of Asseria

Systematic archaeological excavations conducted in Asseria from 1998 to the present day have offered valuable information important for understanding the process of development of an ancient city. Presently it is possible to comprehend the development of Asseria more completely, within the Liburnian culture, closely related to the beginnings of the Iron Age civilization on the eastern Adriatic coast. In the pre-Roman period this city experienced the greatest growth during Hellenism, and in the period of Roman domination in this region, Asseria developed most intensively in the second half of the 1st and in the 2nd century.

In this paper the authors present for the first time complete information on the Iron Age wall uncovered on the northern and western side of the hillfort elevation. Boundaries and outline of the Liburnian settlement have been defined owing to the results of the recent archaeological research conducted by the Museum of Ancient Glass led by dr. sc. Ivo Fadić (campaigns 2009 – 2016). The most distinct segment of

prehistoric fortifications was discovered in the northern part of the hillfort where drystone wall route was documented measuring 120 m in length. This paper will present recent insights related to the technique of building, construction solutions of the entrance areas and fortifications chronology.

Branko Mušič, Matija Črešnar, Barbara Horn

Innovative approaches for understanding Iron Age fortifications. Emphasize on 2D and 3D Subsurface Models in the Light of Electrical Resistivity Tomography

Our current research is focused mainly on fortified Early Iron Age sites and landscapes between the south-eastern Alps and the Pannonian plain. Their complexity yields for innovative approaches, integrating diverse disciplines and techniques, borrowing, adopting and adapting their methods. In the recent years, we have developed a research strategy, which has a firm framework, with remote sensing and geophysics playing vital roles, but is flexible enough, to fit the individual landscapes and to answer various research questions.

One of the techniques, recently included in our tool-box, is the electrical resistivity tomography (ERT), which has many great applications in non-destructive revealing of archaeological and geoarchaeological features. Through the inversion software algorithm a quantitative interpretation of subsurface resistivity survey is obtained, which results in detailed 2D and 3D subsurface models. Therewith ERT adds an extra dimension to all other non-invasive archaeological surveys we use. It significantly contributes to determination of position, geometry and exact depth of buried archaeological structures and enables reliable predictions on type of constructions. As a surplus also data about the surrounding medium of different formation layers are obtained, which can be applied in combination with other proxy data for interpretation of wider geoarchaeological and palaeoenvironmental contexts of either separate archaeological site and/or are areas between them.

Our ERT surveys at several fortified sites assured data sets in a non-expected quality. During investigations of different fortification structures, e.g. ramparts, walls and ditches, they were compared with results of other traditional archaeogeophysical methods and finally by targeted archaeological excavations.

Roman Krivanek

Fortified sites in Bohemian archaeology from the view of application of non-destructive geophysical methods

Different types of fortified sites (Prehistoric hillforts, Celtic oppida, early medieval strongholds, smaller medieval strongholds or motte, medieval or modern castles,

military camps, etc.) were built in specific, strategic or dominant places in the variously rugged Czech landscape. Dimensions of these fortified sites are varying between 0.X ha and more than 100 ha. Large scale of sites and the real (financial, personal, time) possibilities of archaeological research do not offer to have detailed information about more than only smaller areas of only some chosen sites. But combination of the results of investigations with results of various non-destructive survey methods (including geophysical measurements) we can use for identification and mapping only in subsurface preserved archaeological situations in scale of the whole site. Application of various geophysical measurements at archaeological sites in the Czech Republic (and in former Czechoslovakia) has a long tradition (67 years). Various Prehistoric hillforts, other enclosed areas or Slavic strongholds were observed using partial geophysical surveys in several archaeological projects. Surveys were often targeted to specific areas of sites and brought new knowledge about the construction of fortifications, location of gateways, communications and locations of specific activities. But during the last decade new ways of application of non-destructive geophysical method for survey of the whole sites offered new possibilities of use of geophysical data. The results of systematic large-area magnetometer measurements (combined with particular geoelectric resistivity or GPR measurements) changed our ideas about the extent, structure and fortification of site, a way of extinction or state of sub-surface preservation of archaeological features. The spatial geophysical results were used for verification of some aerial or remote sensing data, old maps, surface artefact collection or metal detector surveys. In this lecture, selected examples of geophysical surveys of various fortified sites will illustrate a wide scale of application for the needs of archaeology but also for conservation and heritage care of intangible archaeological monuments.

Bo Nissen Knudsen

Uncovering Lost Danish Castles: Toponomastics, archaeology, history and geophysics – assisted by moles

Facing turbulence, strife and civil war in 14th century Denmark, local elites erected a large number of castles and fortifications. But many of these were destroyed in the – often very violent – process of reestablishing central authority towards the end of the century, and in 1396 Queen Margrethe I even issued a ban on private castles.

Fortifications were brought down in large numbers, and today we find only scattered remains. In the Region Midtjylland (Central Jutland Region) about 200 fortifications may have existed, and a selection of castle mounds in the region have now been subjected to a pilot study. Cooperation between disciplines is crucial in extracting knowledge from what little is left for each, and archaeologists, historians, name scholars and geophysicists even had help from moles unearthing brick material! Results and new challenges will be the subject of this presentation, with

emphasis on the toponomastic studies.

The analyzed place-name material falls into two categories: 1) Names of the fortifications – or the ruins – themselves and 2) Names in the surroundings indicating their presence. Most often the names, especially in the latter category, have been recorded 300-500 years after the period of interest, and the meaning as well as the reference of the name elements may have changed over time. Sometimes we are even faced with sarcastic naming.

One clear example of the methodological challenges is the name element *borg*. It means 'castle' in modern Danish but has changed its meaning considerably over the ages. Another example, the element *holm*, simply means 'island' but seems closely tied to medieval (and post-medieval) castles none the less, even those not situated on islands.

Bruno Škreblin

The fortification system of Gradec (Zagreb) in medieval period

With the issuance of the Gold Bull in 1242, King Bela IV established a free royal town granting certain privileges to its inhabitants. On the other side, new citizens were obliged to build town walls. In this presentation, it will be discussed the extent of the city walls and location and function of towers primarily based on archival records but also on some archaeological findings.

Thursday, 8th June 2017

HALL A, First Morning Session, 9:00-10:55

Josip Višnjić

TURNINA (*TORRE DI BORASO*) - Carolingian period fortress (?) and high medieval keep

About 4 km eastern of Rovinj's Old Town lay ruins of one of the oldest partially preserved medieval fortified building in Istria. Medieval tower Turnina is built on top of the eponymous hill (107 meters), in the extraordinary strategic position from which all access roads to the city could be monitored and controlled.

The earliest historical data about Turnina date from the 14th century, but the results of archaeological researches, that has been conducted in recent years, confirm the earlier dating of its initial construction phase. The small archaeological findings and

conducted radiocarbon analysis suggest that the site was used from 9th, until about the end of the 15th century. In the meantime, the tower has experienced significant and somewhat smaller reconstructions which resulted with classical high medieval period keep appearance.

The lecture will present the results of recent archaeological researches and analysis of the preserved building structures and provide proposals dating of individual segments of the building.

Naďa Profantová

Early mediaeval fortification in Klecany, Middle Bohemia

The hill-fort in Klecany, Middle Bohemia, was dated in 70ies of 20th century to the 12th century. The new trench in 2011 identified two Phases of settlement in connection of fortification and both of them are dated to the 10th century, maximally 10/11th century. The main northern fortification is localised in two lines. Are they coincident? The answer is not clear yet.

Zsolt Csók

The early meadieval fortifications of north-western Transylvania between research and nationalist mythology

The north-western part of Transylvania, mostly the territory set between the Meseș and Plopiș mountains represents one of the most important key areas to understand 11th – 12th century, local and regional realities. Since the 19th century, Romanian and Hungarian historiography tried to explain, argument, prove or disapprove on issues mentioned in the Gesta Hungarorum written by Anonymus, concerning the expansion of the Hungarian Kingdom in Transylvania. Recent archaeological researches revealed extremely interesting facts, mostly on the so-called fortification "ring" of the area, giving birth to new theories, excluding nationalist approaches from both mentioned sides.

Dejan Radičević

Utvrđenja na vizantijsko-ugarskoj dunavskoj granici 11-12. stoleća / Fortifications on the Byzantine-Hungarian Danube border in the 11th and 12th centuries

Since the last decades of the 11th century, and especially during the 12th century, the interests of two powerful states, the Byzantine Empire and Hungary, collided in various regions of the Balkans, but it seems that the main battlefield and the

very heart of the conflict resided in the border zone along the Danube. Belgrade and Braničevo, on the Byzantine, and Zemun, Kovin and Haram on the Hungarian side, became important military posts and defensive strongholds, but also starting points for forays across the river. Therefore, the border defense system was given special attention by both sides. The importance of this issue is best illustrated by the development of fortifications, of which written sources offer valuable information, corroborated and largely supplemented by the results of archaeological surveys. Restoration of existing fortifications and construction of the new ones ran more or less simultaneously on both sides of the Danube. Quite in keeping with the contemporary ideas of the Byzantine, or Hungarian, military architecture, stone fortifications were built on the Byzantine side, while the ones on the opposite, Hungarian side, were made of earth and wood. This papers aims to present the current state of research of these fortifications and to emphasize the differences of their methods of construction and organization of defense.

Andrej Janeš

A Phantom Menace: did the Mongol invasion really influence the stone castle building in medieval Slavonia

The Mongol invasion of the Hungarian kingdom in 1241/1242 was one of the great events that occurred in the Hungarian history and became a landmark, especially in connection with castle building. In historical research on castles and also in popular culture, there is deeply rooted idea that stone castles were built as a result of the Mongol invasion. Many research papers, on the topic of castles in the territory of medieval Slavonia, begin with the notion that they were mostly built in the middle of the 13th century in fear of a repeated Mongol invasion. In the case of medieval Slavonia, for most of the known castles, the exact date of their construction is unknown.

Batu Khan's armies that invaded the Hungarian kingdom were not groups of marauding nomads looking for a place to pillage and settle, but a professional army of one of the greatest empires that medieval world has seen. The Mongol army was composed of many nations, including sedentary people versed in siege techniques (Chinese, Persian, and Armenian). On their way to Hungary, the Mongols conquered several Russian principalities by successfully besieging their capitals such as Kiev, Vladimir and Ryazan.

On one hand, stone fortifications could not stop the Mongol invasion but could slow down their hunt for the Hungarian king Bela IV. On the other, Hungarian neighbors, primarily the Holy Roman Empire, knew how to build stone castles partially as their policies of spreading towards the southeast, decades before the Mongol invasion.

This paper will try to show that the reasons for building stone castles were many,

such as the spread of feudalism, partition of estates, the Arpad policies towards the West, the use of castles as symbols of might and rule and etc. The threat of a repeated Mongol invasion in later centuries was more a myth than reality.

Thursday, 8th June 2017
HALL B, First Morning Session, 9:00-10:55

Matthias Grebien

The land wall of Side in context of fortification systems in Asia Minor

According to the prevailing opinion the land wall of Side dates in the beginning of the second century BC. Most of these theories are premised on aesthetic features or the weapon frieze from the east gate. It was to be assumed, that the frieze, which was interpreted as a tropaion, was built in the gate simultaneously as its construction and it dates the building respectively the land wall to the years shortly after 188 BC. New excavations at the gate produced the evidence, that it was built earliest in first century BC and the frieze was brought there in late antiquity. Based on these results the frieze cannot be a dating basis for the land wall. A new approach of dating for Perge, which is an established comparative example for the land wall of Side, implies, that the fortifications of the city were built in the first century BC or later and not in the second century BC. The city wall of Pompeiopolis, which was a late republican city founding, shows strong similarities to the land wall of Side. These new approaches and research, done in 2015/ 2016, shall be considered for a new date of this Sidetian fortification.

Hrvoje Vulić

Ramparts of love – What defended the Roman Cibalae?

Fortification system of the roman town *Cibalae* (Vinkovci, Eastern Croatia) has been a problem ever since the first scientific publications. Sources are not mentioning it and the first drawing is brought by count Marsigli in the early 19th century. Different researchers of Cibalae interpret it differently, so from Brunšmid onwards we have mentions of city walls, palisades, ramparts and ditches, but only waterways surrounding *Cibalae* have survived and still are visible today. Many rescue excavations and surveillances were conducted on the position of the fortification system in last 40 years but they also resulted in different interpretations. Goal of this presentation is to give the overview of the research and bring forth some new facts about the fortification system of *Cibalae* found during excavations and revisions of old excavations in the last decade.

Slavica Filipović, Vladimir Kusik

Fortifikacijski sustav Murse / Fortification system of Mursa

Topography of the boundaries of Mursa, conditioned by the position of its fortification system, was previously based on the findings from few archaeological excavations, epigraphical, cartographical and historical sources which formed the basis on which the location, extent and the type of the fortification system of Mursa was presumed.

The archaeological research in the modern Lower town Osijek, at the site of Silos 2006 - 2007, today's School of Crafts 2007 and the location of university Campus, today's site of the Faculty of Law in 2015, the existence and the precise location of the fortification system of Mursa were confirmed, along with its architectural and structural features.

Researched structures form the fortification system located on the eastern, western and southern boundaries of Mursa, which consists of parallel defensive ditches of *fossa* type and a rampart preserved in the form of a trench.

Gábor Bertók

Iovia – a fortified Roman settlement in the centre of Pannonia

The Roman fortified settlement suspected to have been called Iovia was discovered as a site of scattered surface finds in the late 19th century. Aerial photographs having been taken of the site since 1996 revealed that a defensive wall including towers and a large gate structure encircle an area 600x600 m in size. In its centre, the area has a major building complex (80x120 m) comprising two squares and several large buildings connected with the gate by a 200 m long colonnaded street. The defences also enclose several other structures, but there are also internal areas that seem to be void of any buildings. Based on this evidence and field survey data the site was suspected to have been a 2-4 century AD urban settlement, but recent investigations including magnetometry, GPR data and excavation have raised other possibilities of interpretation that will be presented in the lecture.

Galina Trebelova

Great Abkhazian (Kelasur) wall and the problem of localization Apsilii borders

Researches of the Kelasuri Wall were conducted by our expedition in 2013 - 2015. Kelasuri Wall is one of the most controversial and enigmatic historical and architectural monuments of medieval Abkhazia. The first information can be found in the works of scientists and travellers of the 19th century. However, until recently, its exact location was unknown and there was no consensus about its dating. Analysis of the literature showed that the views of researchers differ radically; some

suggestions date it to antiquity times others to a modern period, difference of twenty-three centuries! Therefore, these two issues became the main goal of our work. As a result of our work length of wall was established as 80 km. The exact coordinates and plans for 208 towers that survived until 2015 were recorded with help from GPS. Nine towers that were identified along the river Aaldzga (Galidzga), which previously had not been recorded and documented, are completely identical in its orientation, planning and method of construction to towers of the Kelasuri Wall.

Analysis of the mortar (building mixture), construction techniques, partial excavation and modelling in GIS led to the conclusion that the wall was built in the so-called "Tsebelda period", i.e. in the period of the Late Antiquity to the Early Middle Ages.

It was concluded that the Kelasuri Wall stretched from the foothills to the sea, but on the Aaldzga river (Galidzga) in the area of the modern city of Ochamchira and the ancient city Gyuenos and not on the Ingur river as previously was assumed by most researchers, who included in to the system all of the defensive structures located in Eastern Abkhazia. Probably, territory fenced by wall was an area of public agricultural formation of ancient state of Abkhazia - Apsilia.

Thursday, 8th June 2017

HALL A, Second Morning Session, 11:15-12:30

Gergely Buzás, Adrián Berta

Castle constructions by private landholders between the mid-14th and mid-15th centuries in Hungary

King Louis (I) of Anjou had several new royal castles and palaces built. The majority of these had a rectangular ground plan with palace wings on all sides, and were comfortable, palace-like buildings (for example, Visegrád, Diósgyőr, Zólyom, Végles). During his peaceful reign, most landholders erected in the centre of their domains either unfortified manor houses (such as Kisnána, Szászvár, Pomáz) or palace-like castles similar to those built by the king (for example, Kanizsa). King Louis' successor, King Sigismund of Luxembourg (r. 1387–1437) followed his predecessor's taste in castle constructions (see Gesztes, Tata, Székesfehérvár). During his reign, however, a new castle-building surge began in the circles of the aristocracy who gained enormous wealth during the change of dynasties.

Among the new residential castles they built, there are castle-palaces with a rectangular ground plan and a closed inner courtyard (such as Ozora), but also a new, simpler and less regular type of castle appeared that too had a rectangular ground plan but there were palace wings on 1–3 of its sides only (for example, Gyula, Dombóvár). Some castles built earlier were also changed to this new form (Simontornya, Csesznek, Beckó). Also palaces with a similar groundplan were built in this period (Nagyvázsony). During the two decades of civil war that followed the death of Sigismund's successor, King Albert of Habsburg (r. 1437–1438), the defensive function of landlords' residences became significant again. Old castles of noble families were modernized at this time, and also a significant part of originally unfortified manors dating from the Anjous' and King Sigismund's time were turned into castles (pl. Kisnána, Szászvár).

Boris Yanishevskiy

The protection system of the road from Moscow to Smolensk in 14th – 15th centuries

There were two states which were called 'Rus' – «Moscovskaya Rus» (Moscow's Rus') or Duchy of Moscow and «Litovskaya Rus», which was called Lithuania as well. Duchy of Smolensk was situated on the east of Lithuania and was its vassal. The capital of it was Smolensk. This duchy was a fragment of Old Russian state with the capital in Kiev together with the many other duchies of Moscow's Rus' and Lithuanian Rus'. Several wars happened between Duchy of Moscow and Lithuania for Duchy of Smolensk in 14th – the beginning of 16th century, in a result Duchy of Smolensk was added to Moscow in 1514.

The territory between Moscow and Smolensk is up to now covered with a forest, that is why it was necessary for the roads for forces, goods and diplomatic movements and etc. to have been organized. The large-scale maps of this territory were created not earlier than in the first half of 18th century and the descriptions of explorers (voyagers) were remained from not earlier than last of 15th century. It has to use the materials of archaeological maps and extracts of chronicle to find out the line of the road.

It was able to trace this line because of the disposition of the hillforts – castles. These castles, surrounded by wooden walls, are situated in 30-50 km distance between each other; it is the average day trek for the horseman. The chain of the hillforts lasts along the Ugra, the Bolshaya Vorya, the Malaya Vorya, the Protva, the Moscow – rivers which are included in the Oka's river basin. There are about 14 fortified places in this way. The most of them are badly explored, but have layers dated of medieval time. Five hillforts in this way were researched and there were found remains of 14th – 16th centuries. Three of these hillforts were used only in that time. First written information of this road is contained in chronicle about campaign of first Moscow duke Michail Yaroslavovich to Lithuania in 1248 and campaign of

Lithuanian duke Algirdas (Olgerd in Russian chronicles) to the Moscow in 1341. The length of the road is about 400 km. The end of using this way was when duchy of Smolensk was added to duchy of Moscow in 1514. Moreover this road was shifted to the north. There are notes of explorers who used new road in the last third of the 15th century.

Claudio Mazzanti

The rediscover of a Italian fortification: the Cantelmos Castle in Bussi sul Tirino

In Bussi sul Tirino, a small historical town of the Abruzzo Region in the central Italy, there is a building commonly known as the Cantelmos "Castle": this noble residence is the bigger than all other neighboring buildings; it probably coincides with the native nucleus of the urban centre, near the Piazza Tirino, still surrounded by the ancient city wall: the building has serious structural damage due to the earthquake of 2009; however, the analyses conducted for its repair, allow us to acquire new information on the history of its transformation over the centuries.

Founded in the Middle Ages, it was originally a watchtower; then the building was transformed and extended, between the fifteenth and seventeenth centuries, by drastic formal amendments; currently it shows architectural feature of the eighteenth and nineteenth centuries. In the first half of the twentieth century, the mansion has been further fragmented into several residences, altering the original distribution inside, even through structural changes, such as the elevation of the main floor or the re-construction of the tower, without historical references and using unsuitable materials.

Today, with an accurate metric survey of the building and a depth investigation of its masonry walls, we can identify the transformation process and the structural characteristics, starting from the analysis of the kind of material used, especially its dimensions. In addition, due to recent developments in knowledge about the fortifications of this area, we can place this castle in the early defence systems of towers and fortified buildings.

The purpose of the investigation is to rediscover a fortification: while retaining the name "castle", until now we had lost all trace of it.

Thursday, 8th June 2017

HALL B, Second Morning Session, 11:15-12:30

Krešimir Mijić

Bedemi i gradska vrata antičkog Iadera/ City walls and City Gates of Ancient Iadera

Archaeological research conducted on the Zadar peninsula in the past few years have contributed to a better understanding of the appearance of ancient Iadera. The discovered remains are recognized by archaeologists as the remains of the ancient buildings. The type of the building and its purpose are determined in accordance with those materials. Therefore, the residues of ancient Iadera ramparts are viewed as a part of the aforementioned remains, according to archaeological research on the Petar Zoranic Square, Ivan Pavao II Square, St. Nicholas Monastery and Liburnian Coast. The results of the archaeological research open new questions related to the ramparts of ancient Iadera and facilitate the better understanding of the Roman Colony. The results of the aforementioned archaeological findings are presented in this paper.

Berislav Štefanac

Kasnoantičke fortifikacije na sjeveroistočnoj strani zadarskog poluotoka / Late antique fortifications on the north-eastern side of the Zadar peninsula

Synthesis of old and new archaeological research of the historical nucleus of the city of Zadar is used to illustrate the importance of certain elements of late antique defensive system in urban matrix of ancient lader. Old excavations unearthed certain segments of the wall representing important components for better understanding of late antique stratum while newly discovered fortification segments offer a more complete image of the city perimeter outline in the period of Late Antiquity. Previous theoretical insights about lader were mostly focused on the study of wall segment on the terrestrial side of the Zadar peninsula, in the area where the fortification line spread parallelly with the route of the early Imperial wall.

An important contribution to better understanding of late antique fortifications is evident in the results of the recent rescue archaeological excavations (2015) conducted by the Museum of Ancient Glass on the north-eastern side of the city peninsula. During the research several structures were found enriching our knowledge about complex cultural and historical image of Zadar. Recently found segment of walls made of abundance of stone spolia is particularly important as it was the first confirmation of existence of late antique defensive system on the north-eastern sea side of the city.

David Štrmelj, Dejan Filipčić

Spolije antičke provenijencije kao građevinski element zadarskih bedema i fortifikacija / Spoils of ancient provenance as a construction element of Zadar walls and fortifications

In this lecture we will present the usage of spoila of ancient roman origin that have a special and important place as the primary building element of Zadar's late antique walls. Due to their typology (epigraphic monument, part of the utilitarian architecture, etc.), and a quantitative number of the findings, it is possible to distinguish the individual phases and the logic behind the builders of the late Roman walls. The paper will also discuss the usage of earlier archaeological materials and monuments during the construction of the Renaissance and later the fortifications of the city of Zadar.

Thursday, 8th June 2017

HALL A, First Afternoon Session, 14:30-16:25

Piotr Lasek

Castles in Mazovia in the fifteenth and sixteenth century. Features of defence

In the late Middle Ages several defensive-residential structures were built in the domain of mazovian duke Janusz I, vassal of the Polish Kingdom. These castles present unique defensive features, and therefore can be connect with the same workshop. The aim of the lecture is to analyse their defensive system, both in the primary, medieval phase and in early modern times, when the fire weapons dominate the battlefields. I will try to answer, whether modernizations of the mazovian castles defensive features were caused by their adaptation to new kinds of firearms, or by demonstrative or symbolic values. These considerations will be visualized on the background of defensive architecture of the adjacent countries, such as Polish Kingdom, the Grand Duchy of Lithuania or the domain of the Teutonic Order.

Zorislav Horvat

Građevni (arhitektonski) elementi obrane u srednjovjekovnim utvrdama kontinentalne Hrvatske: strijelnice, puškarnice, kruništa i braništa / Defensive building (architectural) elements of medieval forts in continental Croatia: arrow slits, gun loops, crenellations and battlements

The medieval period (13th – beginning of the 16th century) saw the erection of many objects with different purposes, with due consideration always given to defense. Of course, there was always balance between the strategy of attack and the concept of defense. Close combat was of importance in earlier times due to the fact that the enemy had to draw near to the fort and penetrate the wall or climb over it. Defensive activities took place on the top of the wall, protected by a crenellation. Arrow slits within walls are rare and had to be adapted to the shape and size of the bow.

The introduction of firearms, which were effective at a greater range, presented a turning point in such battles. Defenders also used such weapons, but from the safety of the walls and towers – from gun loops. To capture any fort the enemy had to penetrate the wall or climb over it: now the defenders used intricately designed battlements on the top of the walls, protected by structures that allowed for close and long-range defensive activities.

Nevertheless, in addition to adapting the walls and later on the towers, it was also necessary to defend certain points and places of the fort, which were more prominent and in greater danger: the entrance gate of the fort, the flat parts of the terrain, etc. Box machicoulis (brattice) were constructed for that purpose, as well as holes for angled shots, drains, etc.

The quality of the construction of defensive structures decreased with time, especially because of the intensification of military operations due to Ottoman attacks. But that was a different period altogether in terms of style and strategy.

Milan Procházka

Transformation of fortification systems in the late middle ages at the border of today's Western Bosnia and Croatia

This paper points out the transformation of landscape fortification structures with relation to Central European architectural culture during Ottoman expansion into the Balkans, which brought the influence of new cultural tradition. After the occupation of an area around the city of Bihać in the beginning of the 16th century, fortifications of original medieval conception were being remodelled for the needs of the new culture with different religion, military conception and economic system. In response to this new political establishment, modernized fortified structures were created across the border in Croatia. Castles managed by the Ottoman Empire were accompanied by the new, necessary functional object

(eg. mosque, additional crew quarters). Therefore, the aesthetic aspect of medieval space is often reshaped according to a functional point of view. The castles in the border zone were rebuilt for the sake of better defensive abilities or further supplemented by additional small fortification features in their close surroundings. While the chosen fortifications under the Ottoman rule were well maintained, on the Catholic side, demise transformations are apparent.

Joško Zaninović, Antonia Tomić

Utvrde uz Krku i Čikolu: odnos srednjovjekovnih struktura i osmanlijskih nadogradnji / Fortresses by Krka and Čikola Rivers: Interaction between Medieval and Ottoman structures

Area by the river Krka during the middle age was very populated. On strategic positions croatian noble family Nelipići built fortresses: Kamičak, Bogočin i Nečven by river Krka, Ključica and Gradina were bulit by its biggest tributary river Čikola.

First mention of Ključica in written documents was in 1333, of Kamičak in 1345, of Nečven in 1376 and of Bogočin in 1486. In medieval documents Gradina was not mentioned by its name, but first mention of Drniš dates from 1494. During Ottoman conquest Bogičin and Kamičak were destroyed, and from beginning of 16th century those fortresses are abandoned. Nečven, Ključica i Gradina fell under Ottoman control.

Ottomans captured Nečven, they fortified the structure and made it main town of the same name nahiye (Nečven Nahiye). Drniš fort Gradina was also repaired because of its geographical position on important traffic routes, so Drniše became big trade and cultural center.

Ključica was under Ottoman legacy till War of Candia in 1648. After that Ključica is abandoned, and due to inapproachable settlement its structure is best preserved overall named forts.

Aboveground remnants, archive documents and cartographic material made possible primary reconstruction of reconstruction of historical context of those three fortresses. Archaeologists conduct survey to search all of those forts, and they already came to some new findings. The final aim of archeological research is reconstruction of the ground plan and, if possible, marking up building phases and comparison of medieval and ottoman building methods. In this article we are going to demonstrate how new archeological researches have reflected on earlier descriptions of fortresses by Krka i Čikola Rivers.

Adrián Berta

Excavations on Dombóvár Castle between 2014 and 2016

Dombóvár is located in Tolna County, Hungary. Two medieval castles have been built in the town's history. The first one was mentioned at the beginning of the 14th century, wich has been excavated by Zsuzsa Miklós between 1999 and 2001. This older castle and the corresponding area were possessed by the Kőszegi's, a powerful family ruled the western part of the medieval Hungarian Kingdom. Charles I of Hungary took the castle and exchanged it with Peter and Stephen, the sons of Stephen Csák. They were the ancestors of the Dombai family. The Dombai family established a spectacular career and had a remarkable political influence in the Hungarian Kingdom in the second half of the 15th century. The family died out in the 1520's.

At the beginning of the 15th century, the Dombai family built a new castle cc. 1 km south-west from the old one. This castle has been excavated between 2014 and 2016 by the staff of the University of Szeged Department of Archaeology. The whole building had a rectangular layout with a courtyard and mansion on its northern part. After a few decades, it was extended with a hall and a tower in the southern part of the courtyard. At the second half of the same century on the eastern facade, a gothic passageway was built. The last large-scale extension of the castle was probably made in the first two decades of the 16th century. This time, a new outer wall and additional towers were built. During the Ottoman Period (16–17th centuries) it served as a Turkish border fortress. In 1686 Louis William, Margrave of Baden seized the castle and five years later the emperor gave it to Paul I, Prince Esterházy. The castle was destroyed entirely in 1702.

Thursday, 8th June 2017

HALL B, First Afternoon Session, 14:30-16:25

Dejan Crnčević

Kule srednjovjekovnog utvrđenog grada Smedereva. Oblici, kontekst, značenje / The towers of the fortified medieval town of Smederevo: forms, context, meaning

The fortified town of Smederevo represents the last, and after Belgrade, the most monumental work of the fortification architecture of the medieval Serbian state and is one of the most representative ones in south-eastern Europe. Built

on a flat and low river bank, at the confluence of the Jezava and Danube rivers, it meant to be the capital of the medieval Serbian state in the last decades of its independence. It represents a work of a clearly defined urban structure, conceived in two functionally and semantically separate wholes (a fortified rulers' dwellings and a fortified urban settlement), with a suburb. The urban whole, created on a rather large topographically defined triangular piece of land (around 11 ha), was protected by a rather complex defense system consisting of the external and internal ramparts that included no less than 25 towers of intricate construction and monumental dimensions.

As this defense system was executed in several stages of construction, realized during the last decades of Serbian independence as well as during the first decades of Ottoman rule (1428-1479), this paper purports to present the multiplicity of the forms, structures and ways of construction of the towers of the medieval town of Smederevo. Analysis of the technical solutions applied in these fortification elements makes a necessary basis for a more comprehensive understanding of their functions and meanings of which some, aside from being primarily military, are certainly symbolic or even esthetic. Finally, comparative analysis of the applied procedures and conceptual changes in relation to similar architectural works - in the region and in a broader Byzantine cultural area - offers a possibility of a contextual overview within a broader picture of that particular Late Medieval period.

Željko Peković, Kristina Babić

Obrambeni sustavi Vrata od Pila u Dubrovniku / Defensive systems of the Pile Gate in Dubrovnik

For the purpose of a restoration project of the serpentine which enters the City and the restoration of the Pile Bridge, the site was stratified through archaeological research and the medieval defensive systems of the Pile Gate were clearly defined, known from archival data. The Gate changed its position frequently as well as the defensive systems and the access point – the bridge changed its shape and position through several stages.

The most important access point to the historical core, the one side of Pile, changed its positions and shapes quite dynamically. The Wall of the Gate was first mentioned in 1296 It moved in 1319 to the new, western city wall. It got a moat and rampart in 1351, a wooden bridge which was later replaced by a stone one (John of Siena) in 1398. The rampart received two significant upgrades in the middle of the fifteenth century – part of techniques of firearm warfare.

The walls were reinforced in 1460 – 1461. A new, three-arch bridge was built in 1471, with a new rampart – a semicircular revelin. A fort was built on the west end, a smaller revelin for further defense of the access point. Ramparts expanded, the older ones were buried. The Gate was moved a fourth time in 1537, when the

bridge was reduced to two arches and The Gate fortified with another drawbridge.

On the basis of archival data and recent archaeological research, the site was stratified, as well as the builders and the stages of construction.

Hrvoje Manenica

Utvrda Gradina – Osridak, tri faze utvrđenog platoa / The fort Gradina - Osridak, three phases of a fortified plateau

On the north coast of Lake Vrana, near the Adriatic coast, there is an archaeological site of Gradina as part of the hill Osridak. In cooperation with the *Nature Park Vransko jezero*, Archaeological Museum Zadar began archaeological research at the site in March 2016.

The site bears the remains of a fortress from the late middle Ages. Before the excavations there were ground remains visible of two cylindrical guard towers, but during the research, an older phase of a fort was discovered, which was destroyed by fire at the end of the 15th century. Small archaeological objects were discovered, remains of pottery, parts of medieval weapons as well as multiple phases of architecture. Size and method of construction suggests that this is a very important fort situated at a strategic point that allowed the control of transportation of people and merchandise by sea and coast, over the Lake Vrana further into the interior of Ravni Kotari area.

At the presentation we will present the results of the preliminary research on the eastern part of the plateau, on which one part of the fort is located.

Lejla Bečar, Adisa Lepić

Srednjovjekovna vojna utvrda Čajangrad / Medieval Military Fortress Čajangrad

During the early and late medieval period in Bosnia and Hum, as well as the rest of Europe, an expansion in building military fortresses, towns, fortifications and suburban settlements was evident. A sudden increase in the demands for ore has contributed to development of urban settlements in the 14th and 15th century, therefore fortresses that emerged were directly connected to mining groves or located nearby. In the Visoko area, besides the royal town of Visoki, five sacral and secular buildings dating to the late medieval period were researched and/ or recorded. One of those sites Čajangrad is located 11 kilometers away from the center of Visoko today.

The first archaeological campaign on this site was conducted in 2016. Due to the lack of research in the past the information about this site in academic papers are scarce. Hamdija Kreševljaković first mentioned Čajangrad for having an important strategic position in the book *Old Bosnian Towns* in 1953. Other prominent scientist

recorded that a distinct substructure of one tower, protective ditch and parts of the perimetral wall were visible. It is likely that the name was formulated by the end of 15th and beginning of 16th century. Marko Vego interprets the word *čajan* as old Slavic meaning guarding which matches the function of this site.

Taking into consideration all information gathered during the 2016 archaeological campaign, written sources, scientific literature and oral traditions this article will present the preliminary results about Čajangrad. Hoping that this work will contribute to this scientific gathering special attention will be given to fortifications, structures and building techniques.

Silvija Salajić

Obrambeni sustavi srednjovjekovne nizinske utvrde u Virovitici i proces njezine revitalizacije / The Defence Systems of the Mediaeval Lowland Fortress of Virovitica and its Revitalisation Process

In the paper ten years of archaeological excavations of medieval lowland fortress of Virovitica is discussed. The importance of the fortress and its defence systems through several centuries of Middle Ages and the beginning of Modern period is examined with the special consideration on Virovitica´s specific geographical location between two great empires. The vantage position of the fortress in the centre of the town of Virovitica was continually used by the modern period elite. At that location the count Pejačević has built his castle environed by the park. Today the Pejačević Castle is being renovated with EU funds. That surrounding area is planned to be presented as the archaeological park with various facilities and activities as integral parts of the project of revitalization of the medieval fortress.

Thursday, 8th June 2017

HALL A, Second Afternoon Session, 16:45-18:20

Szabolcs Nagy

Defensive features and defensive purpose at the castles of Nicholas of Ilok. A mid-fifteenth-century case study

The traditional 'military' understanding of medieval castles was gradually overshadowed at latest from the 1980s, when a new generation of scholars started to recognize and analyze the complexity of their functions. This paradigmatic shift

was also supported by the so-called 'spatial turn' from the early 1990s. Today the symbolic aspects of elite residences and the fact that castles could act as a medium to establish or strengthen the owners' social status is almost a commonplace in scholarly discourse. However, the actual defensive purpose of medieval castles in certain periods and regions (or under special circumstances) is unquestionable.

In the lecture I will present fifteenth-century building activity of a powerful baron, Nicholas of Ilok, at the castles of Ilok (HR), Várpalota (HU) and Orahovica (HR). These examples provide an interesting case study of the importance of defensibility at different fortresses built by the same owner during approximately the same time period. In both cases new, twentyfirst-century results of archaeological research are available for evaluation. Recently distinguished Croatian and Hungarian historians have also dealt with the figure of Nicholas of Ilok. The differences and similarities will shed some light on the problem of symbolic and defensive aspects of castle construction in late medieval Hungary.

Duško Čikara

Jednoprostorne kurije u kontekstu obrambene arhitekture i pretpostavka za genezu velikaških kaštela 16. stoljeća u sjevernoj Hrvatskoj / Single-room manor houses (curiæ) in the context of defensive architecture and their presumed role in the genesis of High Gentry 16th century castella in Northern Croatia

The existence of buildings with the single-room layout in Northern Croatia, consisting of a roughly square room and a narrow corridor, has been proposed based on conservation research and field inspection of some more complex multi-layered structures. It was further confirmed by an insight into historic ground-plans of several self-standing buildings of the above mentioned ground-plan organization. It can be argued that the common term curia (manor house), apart from marking an estate, was also used precisely for such nuclei of the baroque country mansions in the north-western part of Croatia, as spatially the simplest form of feudal architecture of the 16th century. There is also a possibility that the term *fortalitium* (fortified house) related exactly to buildings of such, so far not recognized model of spatial organization, which, in this case, also included certain defensive elements, such as a tall entrance gate, gun holes and, possibly, brattices. Identification of the spatial nuclei of smaller dimensions at the edges of more complex defensive structures of the 16th century provide enough indication to assume that those structures also developed at the high nobility estates by combining two or more appropriately positioned manor houses, at first perhaps linked only by palisades, thus acting as refuges for local population during the Ottoman raids. Considering the fact of partial, and in some cases complete, removal of the historical structures, and, for static reasons, changes to the original plan in the process of rebuilding, the eventual confirmation of the hypothesis about their

development from a single-room core could be provided primarily by further well-targeted geophysical and archaeological research.

Ivana Škiljan

Fortification structures of Veliki Tabor – From late medieval fortress to renaissance castle

Veliki Tabor is one of the best-preserved late medieval and early modern age fortifications in Croatia. Recently finished conservation research and archaeological excavations revealed new information's about the foundation of the fortress and changes its fortification structures underwent through centuries. The oldest part of the city is the central late Gothic pentagonal turret built in the 15th century originally surrounded by archaeologically documented wooden palisade replaced by masonry ring with four semi-circular towers around 1500 and during 16th century. Recently discovered artillery loopholes and drains for stones, hot water and tar in curtain wall and walls of all four semi-circular towers bring new conclusions about Veliki Tabor's defence system. Pentagonal turret with four towers interconnected by a curtain wall and present day entrance wing make the inner core of the fortress enclosed by another outer wall, which encircled the entire hill's plateau. The Veliki Tabor outer wall fortification structures consisted of, until present day, completely preserved pentagonal bastion and recently excavated round tower on south and semi- circular tower on the north side of the plateau. These structures were, together with bastion and today unpreserved entrance tower, completely connected with an outer wall, which is still under archaeological research. Research results show several phases of function and construction of the round south tower, and document the construction of north semi-circular tower in the beginning of 16th century. According to some researchers, the Counts of Cili were the first founders of the fortress known then by another name. Since the name Veliki Tabor originates from the term tabor i.e. war camp, Veliki Tabor's advanced fortification structures by some authors can be connected with antagonism between Habsburg and Korvin dynasties in the second half of the 15th century, according to its location in the north-western part of Hrvatsko zagorje province on the historical border of Holy Roman Empire of German Nationality and Hungarian – Croatian Kingdom.

Péter Levente Szőcs

From fortress to residence. The fortifications of Ardud / Erdőd Castle and their fate during the 18th century rebuilding

The Castle of Ardud / Erdőd (Satu Mare County, Romania) was built as a noble residence and the centre of a huge domain during the second half of the 15th century, though it was provided with several elements of fortification even at

this early stage. The castle gained primordial military and defensive role during the Ottoman Wars of the 16th century, when a new fortification system was built. The siege of 1565 ruined the castle, and, after that point, it was abandoned. The complex was rebuilt during the first half of the 18th century, again as a residence of the noble landlord family. During these rebuilding, several elements of the old fortifications were reused, while others were destroyed. The paper discusses the fate of the fortifications during the rebuilding period, using contemporary written sources, archival images and the results of the archaeological researches.

Thursday, 8th June 2017
HALL B, Second Afternoon Session, 16:45-18:25

Palma Karković Takalić, Petra Predoević Zadković

Kasnoantičke i srednjovjekovne fortifikacije grada Rijeke, stanje istraživanja i nove smjernice / Late Antique and Medieval Fortifications of the City of Rijeka: The Present State of Research and New Guidelines

From the 18th to the 20th century, the old city fortifications of Rijeka were systematically demolished and almost all traces of the historical defence system of the city had disappeared. Rare and fragmented remains of the city walls, the lack of written sources, historical photographs and illustrations, for the related period, represent difficulties in an attempt of their reconstruction.

This research was carried out within the project *Medieval Heritage of Kvarner region* of the University of Rijeka and the Department of Ancient and Medieval art (Faculty of Humanities and Social Sciences in Rijeka). Based on the existing data-results of archaeological excavations, archive fonts and historical sources, the characteristics and changes of Late Antique and Medieval fortifications of Rijeka will be presented by authors. Primarily, the recent literature on the topic will be examined critically in order to be able to confirm or rewrite previous knowledge. Special attention will be given to the comparison of different phases of the defence system and urban development of the city as well as to the well-known historical facts. Results will be compared with other urban centres of the broad area of the North Adriatic and Dalmatia.

Vedrana Jović Gazić

(Dis)kontinuitet obrambenog perimetra u gradovima antičko-srednjovjekovnog porijekla na istočnoj obali Jadrana – prednosti i nedostatci / (Dis)continuity of the defense perimeter in the eastern Adriatic cities of Ancient-Medieval origin - advantages and disadvantages

The state of construction, maintenance and functionality of the walls, which spatially define the perimeter of every historical urban whole, are indicators of the intensity and continuity of urban living. The importance of the distinction and as-accurate-as-possible definition of Medieval perimeter in the cities of Ancient-Medieval continuity is based on the fact that the defense systems of the 13th, 14th, and even the 15th century generally follow the disposition of the Ancient ones, or their upgrades in Late Antiquity and Early Medieval Period. Sometimes it is a very consistent correspondence which is easily confirmed with material traces, although instances of substantial or minor spatial deviations of defence lines, with visibly different techniques of construction, but with a regular application of spolia out of the stone blocks from decrepit structures of earlier defense walls, are frequent.

By encompassing prominent cities of Ancient-Medieval continuity along the coast and islands of the eastern Adriatic, such as Senj (*Senia*), Rab (*Arba*), Zadar (*Iader*), Trogir (*Tragurium*), and, as a separate category of poleogenesis, the city of Split (*Spalatum*), we will point out possible patterns of "behaviour" in the spatio-functional development of city walls on the crossroads of Antiquity and the Middle Ages, referring, of course, to the crucial influences of broader regional and more confined local cultural, historical and social context as well.

Ratko Vučetić, Ivana Haničar Buljan, Lovorka Štimac-Dedić

Gradske utvrde – primjer Varaždina / City fortifications – the example of Varaždin

In the area of continental Croatia, the city of Varaždin is in many ways unique. Because of its position along the Drava River traffic course the city obtains its royal privileges very early, among the first ones on the territory of the Croatia – Hungary kingdoms. In the 16th century, Varaždin is the center of Slavonian border command, and in the 18th century the center of *the Croatian Royal* Council. According to available information, Varaždin was fortified by palisade walls and ditches in the mid of the 15th century, while the stone walls were erected by the beginning of the 16th century. Dirt bastion fortifications were built in the 1540s. When the threat of war subsided, the fortifications were no longer modernized in later periods, and their final reconstruction begun in the early 19th century.

The process of fortifying cities on the territory of Central Europe is connected with the fact that the cities received their city privileges, and direct reason for it are Ottoman attacks in the 13th century. The cause of the second period of construction of the city fortification was defeat from the Turks in the Battle of Nicopolis when cities were systematically fortified in the 15th century during the reign of *Sigismund*

of *Luxemburg.* After Ottoman siege of Vienna, bastion systems of fortifications are used for fortifying cities from the 1540s. Finally, in the last period of fortifying, new bastion forts are being erected after the Treaty of Karlowitz was signed in 1699.

Although there are many texts about Varaždin and its fortification there is no systematic research – the same is for city fortifications in continental Croatia. The intention of this work is to show conditions, reasons and context in which the city was fortified, as well as to indicate the scale of city walls and their impact on the city development, as well as to draw attention to building, architectural and style features of specific fortification periods.

The research methodology is based on interpretation of historic sources and cartographic presentations, on done archeological researches, topographic-terrain researches as well as metrologic analysis, and mapping. Researches are done integrally and interdisciplinary with participation of archeologists, architects and art historians. The results are going to be interpreted and analyzed in the wider context of continental Croatia and Middle Europe.

Ivana Peškan, Vesna Pascuttini – Juraga

Obrambena arhitektura na varaždinskom području kao jedna od okosnica oblikovanja kulturnog krajolika / Defensive architecture in Varaždin area as one of the backbones of the formation of the cultural landscape

The cultural landscape of Varaždin area has been forming over the centuries, by various human interventions. An important factor in the shaping of the landscape is the construction of the defense structures in strategically important positions. The views at the important relay points in the landscape become altered as the result of human impact and adaptation of favourable geographic positions to human needs. The city of Varaždin, located about 3 kilometres south of the river Drava is dominated by a lowland fortress, the Old Town. It represents the core around which the today's city of Varaždin developed. In the position of today's castle was a fortress - *castrum comitis*, the first seat of tribal mayor, and then the seat of the feudal lords appointed by the king. The history of the castle can be traced in documents from the 12th century onwards. The cultural landscape of the area that is surrounding Varaždin is defined by a series of forts, mainly originating from the medieval period. Some of the most important preserved fortifications in Varaždin area are Vinica, Grebengrad, Križovljangrad, Paka and Čanjevo. There are number of fortresses that have experienced significant changes, upgrades and enhancements, purpose change or, on the other hand, have suffered degradation. These are, among others, Lepoglavska Gorica, Trakošćan, Kneginec and others. The fortifications are in a different state of preservation and the aim of this paper is to make an overview of the current state of the fortresses, their influence on the formation of the cultural landscape, and stylistic analysis of preserved fortifications. Also an attempt to reconstruct the medieval cultural landscape will be made, especially on the sites where the fortifications are mentioned in historical sources, but are preserved only in the archaeological layer.

Friday, 9th June 2017
HALL A, Morning Session, 9:00-10:55

Erdal Eser

A 13th century Anatolian defence structure: Divriği Castle

The year 1220 symbolizes a significant change for the Anatolian Seljuk period in terms of urban tradition. The walled city settlements which are known as Closed City Model began to extend outside the walled city after this date.

The most important example is the capital city of Konya with its double city walls and moat in front of the outer wall. Within the west city wall which had 12 doors was another small castle named "Ahmedek", with thick walls, used as a shelter for Sultans family during wars.

Divriği Castle, in the southeast of Sivas, is one of the most important construction site in 13th century. Divriği is located in Upper Euphrates area, close to the Central Anatolian border, 1250 meters above sea level, in the valley of the slopes of the creek which meets Çaltı river, one of Euphrates branches. The city was founded within the castle area, situated on a hill with very steep slopes to the Çaltı valley and its surroundings. Divriği Castle is one of the best remained examples of Middle Age Anatolian-Turkish Military Architecture with old settlement texture within walls. Limited number of studies, mostly related to the Castle Mosque, explored this structure whose foundations are suitable for the topographic condition of area.

The castle was built in two phases according to existing marks and remains. Regarding date, the only known activity in that period was of Paulicans, who were banished from Divriği in mid-9th century. Small number of inner wall remains point to Byzantium period, while the outer 1000-meter-long wall was built in 1230-1252, made of large stone blocks with facing technique.

Menguceks controlled region from 1142-1277, and beside castle mosque, tombs and fountains, the most important is Divriği Great Mosque and Hospital which is World Heritage Site.

Divriği Castle is impressive with its form suitable for the topography of the region and for unique materials and construction technics which were used. Restoration, following the original state, began in 2015.

Sebastian Belbe

Fortifications of a private castle during the 13th century. Case study of the castle of Tămăşeni / Tamásváralja

The Castle of Tămăşeni / Tamásváralja (Satu Mare County, Romania) is a small fortification, located in the mountainous area and with almost no written evidence. This type of fortification is quite frequent in the region, while the case of Tămăşeni is

somewhat fortunate, that the few written documents referring to the castle permits a rather precise chronology: it was built shortly before 1284, while in 1323 it was mentioned as an abandoned castle. The results of archaeological research, and the non-destructive prospections confirms this chronology and permits to describe the elements of the fortifications. The paper presents the results of the researches conducted at the site, and provides several similar examples from the castles of the region.

Debora Ferreri, Enrico Cirelli

The defenses of Rontana's castle (10th-16th c.)

Excavations in the castle of Rontana have been undertaken since 2007. The *castrum* was settled at the top of the hill. It is a fortified settlement situated nearby Brisighella (Ravenna, Italy), first mentioned in AD 960, together with the parish church of Santa Maria which stands within it, as testified by a late Carolingian chart of the Archiepiscopal Archive of Ravenna. In the following centuries the fortification was the object of many disputes and was listed amongst the properties of the church of Ravenna, the municipality of Faenza, of the Manfredi family and the Venetian Republic. It was destroyed at the end of the 16th century by the Papal army.

The work inside the castle was undertaken in order to study the birth of the phenomenon of 'incastellamento' in Romagna through the examination of archaeological remains. The site, thanks to the extraordinarily well preserved deposit, provided useful data regarding the archaeological stratification of the first fortification phases as well as information regarding houses, workshops and other activities linked to the castle life.

In order to achieve these aims several excavation areas were opened all around the centre of the hilltop, corresponding to the courtyard of the 16th century Rocca. During the course of the excavations a topographical survey was also undertaken of the entire area occupied by the castle and surrounding settlement, in order to gain a detailed understanding of its plan and the various changing in the fortifications techniques.

The excavations were also accompanied by studies and analyses of the architectural archaeology of the many standing walls preserved inside the fortified settlement, in particular the facings of two ruined ogival towers situated at the corner of the Rocca and most of the medieval defenses of the castle.

Stephen Pow

The Location Problem with Hungary's Thirteenth Century Castle-Building Project in the Aftermath of the Mongol Invasion (1241-1242)

Following the Mongol withdrawal from Europe, there was a flurry of castle-building in the Kingdom of Hungary. During the Mongol occupation (1241-1242), there had been considerable slaughter and destruction. Judging by charter evidence and

letters between Hungary king, nobles, and the Papal Curia, the main reason for the large-scale overhaul of Hungary's fortifications was to defend against the Mongols, but the new castles were built mostly in the western part of the kingdom. This has led some historians to suspect that the castles were actually built to defend against Hungary's European rivals such as the dukes of Austria and the kings of Bohemia. Some argue Hungary's monarchs merely used the Mongol threat to gain papal concessions while focusing on their neighbours.

This paper argues that the primary reason for the castle-building activity in the second half of the thirteenth century was the very real Mongol threat. Building trends reveal a documented plan of the Hungarian rulers in the case of a return invasion. They were prepared to abandon the eastern portions of the country, which had already been heavily depopulated, in order to concentrate on the defense of the *Medium Regni* where a sizeable population remained. Furthermore, castle-building depended on the availability of local labour, suitability of sites, and local building materials. The chosen locations of new castles reveals an overarching Hungarian strategy regarding the Mongol threat that took into account the kingdom's material and manpower limitations.

Mária Vargha

In the Shadow of Power. The Impact of Castles in the Development of the Local Church System in the 11-12th c. in Hungary

The sources of the 11th and 12th centuries of Hungary are rather scarce, especially written evidence. Still, some of the most important processes that shaped the later basis of the country – such as the local church/parochial system, and together with it, on the settlement system. Opposite to written sources, archaeology can provide a large amount of data about them. So far, I have collected over 2000 sites from the 11-13th centuries, which allow for a broader investigation of its relations.

In the present paper, I would like to focus on the role and impact of castles and the castle system on the development of the local church system.

The reorganisation of power structures after the year 1000 shaped the landscape of the country in a different way. In this new system, the central elements of power were the county castles. What is special in case of Hungary, is that the foundation of the state, and with that the re-organisation of power - the development of the system of county castles - took place in parallel with the process of Christianisation. In the latter, the development of the local church system took an especially important role. As religion was to express also the new power of the state, the emergence of the local church system can be understood as a sort of „side-project" of that, and the county castles as power centres where the smaller, pointed fortresses of power were the local churches, propagate the new religion and the power of the new state.

With over 2000 sites to analyse, all carefully investigated and put in a GIS system, new possibilities rise to investigate their relation to the county castle system in more detail and in more ways than ever before.

Friday, 9th June 2017

HALL B, Morning Session, 9:00-10:35

Vladimir Peter Goss

Some Models of Early Post-Migration Fortifications in Pannonian Croatia. Very Preliminary Considerations

Genetics teaches us that the Croats have about 25%-35% Slavic blood and around 50% of those who preceded them on Croatia's territory. This just confirms that both components need to be considered in discussing the culture that emerged after the Croatian immigration to Pannonia and Dalmatia, i.e., that the local models were grafted upon those brought along by the immigrants.

In those terms we propose to review two phenomena: the type of a mud-and-timber hillfort as gleaned from the analysis of the early Slavic poetry by Radoslav Katičić, and best traceable in the area of the Croatian Southern Pannonia; and a model based on Roman tradition primarily of smaller forts at the *limes* (e.g., Tulln on the Danube) and reflected also in the local Carolingian architecture.

Within this second phenomenon a special attention would be paid to the castle of Klokoč on the Banovina in particular in the light of a recent rediscovery of materials I collected as part of Professor Sena Sekulić investigating team in 1967, when the building was still surprisingly well-preserved, and possibly some related structures, or such as may embody elements of the both traditions; ever bearing in mind that presented considerations must be seen as a tentative but not negligible incentive for a thorough archeological investigation of the key sites.

Antonio Grgić

The palimpsest of fortification systems on the Northern Croatian Limes: from medieval fortifications to nowadays steel fence with razor blades

In the area of the Northern Croatian Limes in the east-west direction the different layers of the palimpsest of several fortification systems can be read. They are like character sets that are layered in the topography of the region through history:

from medieval forts and castles of the *Wasserburg* type on the line Varaždin – Novi Zrin – Koprivnica – Đuđevac – Virovitica till reinforced concrete bunkers from the beginning of the twentieth century. Today, parallel to this limes on the Hungarian side, a new fortification is being build: steel fence with razor blades as a barrier against migrants and refugees.

As with any palimpsest, the overlapping of signs is being visible. For example, the bunkers from the twentieth century in the village of Torčec had been built near the earthen fortification from the medieval times. Nowadays, these same bunkers that served as protection from the Wehrmacht invasion from the north are overlapping with a steel fence with razor blades which has been built against the migrants and refugees coming from the south.

In the interstices of this overlapping the different spatial, technological and organizational models of defensive tactics can be read. The distinctions are visible in the construction, structure and formation of the fortification systems, and also, the causes of these changes, is thereby easy to distinguish.

Also, the continuity of spatial and design patterns is being visible by this comparison. This continuity is partially defined by the regional topography, but also with the different roles of protection that architecture had to materialize within a particular historical period.

Uroš Košir

Defending the Empire: Austro-Hungarian Great War defence systems in Slovenia

During the Great War, the territory of western Slovenia was a scene of an almost two and a half years long heavy fighting between Kingdom of Italy and Austro-Hungarian Empire. This, about 90 kilometres long frontline, active between the end of May 1915 until the end of October 1917, became known as Isonzo or Soča Front. It ran across the peaks of Julian Alps, the Soča Valley and Karst Plateau to the Adriatic Sea. During the conflict itself, many defence lines on both fighting sides were constructed. However, positions on the Soča Front itself were not the only ones associated with the Great War.

Archaeological data, supported by data gained from LiDAR and historical sources, provided us with an overview of vast pre-war and Great War conflict landscapes

of western Slovenia. In the framework of Modern Conflict Archaeology, different Austro-Hungarian defence systems were identified. The first are represented by rare fortified positions build from the end of 19th century up to the beginning of the Great War in 1914. The Austro-Hungarian army fortified some strategic points in the Soča Valley, with forts *Flitscher Klause* and *Werk Hermann* being the strongholds of the Bovec basin, protecting the route towards Predel pass and Villach basin. Between the start of the war in Europe and the start of fighting on the Soča Front, first scattered defence structures were built in different regions of Slovenia. Just a month before Italy declared war, Austro-Hungarian army changed its plans and started building defence positions towards the west, in the Soča Valley and on Karst. With fighting taking place in different geographical micro regions, networks of trenches, caverns and other positions were built, not only on the Soča Front but also in the hinterlands. Scares remnants of reserve defence line, known as *Savalinie*, can still be found in some areas.

Such locations, some of them almost forgotten and unknown to the public, can be discovered and researched with the help of archaeology. Different archaeological approaches provide us with detailed information on the appearance of conflict landscapes of the Great War in a way that was previously impossible.

David Štrmelj, Dejan Filipčić

Defanzivne vojne adaptacije u zadarskim bedemima za vrijeme talijanske vladavine / Defensive military adaptations in the city walls of Zadar during Italian rule

In this lecture different kinds of adaptations for military use in Zadar renaissance walls will be presented. There are more than fifty underground objects, bunkers, tunnels, warehouses and anti-aircraft positions that where built by the Italian army inside of the city walls like the part of construction of defensive fortifications of Zadar Commune (first defensive zone) from 1934 till 1943. The paper examines the intention of building these defensive structures inside of the walls, their connection, layout, function and architectural solutions and tries to provide answers to question how they have really functioned during the Second World War. The most of these fortifications have not been systematically and scientifically presented yet, and this work is a kind of synthesis, but also a novelty in the knowledge of defensive activities of the Italian army in Zadar during 1930s and 1940s.

POSTERS

Thursday, 8th June 2017
POSTER SESSION, 12:30-13:00

Laura Biasin

Fortified villages in Friuli. The self-defence in rural settings

This research would like to examine, from historical and material point of view, a phenomenon that characterizes rural areas of Friuli in the Middle Ages. In written documents, this topic is more evident between thirteenth and sixteenth centuries but there is a large gap in the archaeological field.

Written sources allow getting a chronological reference on which to report the existence of such fortifications, which in Italian are called "cente" or "cortine". These structures consist of fortified dwellings characterized by the presence of churches and warehouses for the storage of necessities (called "canipe").

It is difficult to identify the architectural features of these systems, because they are mainly composed of simple units, with few peculiarities.

The modern urban transformations have not always erased the remains of the old devices that have been preserved in planimetrical organization of small present towns.

Here we discuss the documentation and analysis tools applied to certain specific cases, chosen because of different degrees of evidence and different degree of historical traceability.

Jaka Bizjak

The outer town walls of Koper

Koper is a coastal town with a rich Venetian heritage located in southwestern Slovenia. It developed on a small island that was inhabited at least from Roman times. The character of the Roman settlement is still poorly known as are the early phases of urban evolution that took place in late antiquity and early Middle Ages. By the 13th century, the town comprised the whole area of the island and it remained constrained to the limits of its shores until the 20th century, when the island became joined with the mainland. The old town center of today's Koper still reflects the configuration of the former island and the urban plan of the Venetian town.

During the evolution from an early medieval settlement to a modern town, Koper

had two town enceintes. The remains of the older inner walls, which embraced the central part of the island, are scarce and have never been the subject of archaeological research. The period of their origin as well as of their abandonment is still unknown. The poster deals with the younger outer walls of Koper that were presumably built in the 12th or 13th century. This ring of defensive walls, towers, bastions, and town gates was 2.53 km long and hugged the whole former island for half a millennium. The poster presents the standing remains, the historical sources, and archaeological data that show the enceinte as a mosaic of many structures built in different periods and in different manners, as a result of continuous destruction and construction of individual parts of the town walls.

Massimiliano Francescutto

Castles of Easter Hills: middle age friulian dynamics in castles constructions

The castle construction phenomenon has represented in the last decades one of the most discussed argument in Middle Age Italian matter. The actual research situation in Friuli seems to have felt only superficially of this big discussion advanced on the rest of Italy, even if the documentary sources of X century has demonstrated a new will to build fortifications after the long phase of Old Age/Early Middle Age castles.

Sites researchers have found structures concerning advanced Middle Age centuries, to be conceived as especially military or residential, escaping the relationship with the social and reality settings in landscapes, also because of lack of information. The most interesting subjects have stressed the need to take under consideration the study of castle settings under a set of circumstances, where is important to strength the relationship between aristocracy and church and the rural world. It is important to search how the Patriarchate and the relationship with the Empire, has influenced the constructions, and how this ones could have taken strategical character and how this aspect could have influences the settings.

The particular features of the friulian situation has suggested to create a program research on the sources of Middle Ages castles buildings, not only by an archeological point of view, but also extended on a critical analysis of middle ages and modern sources, strength by documentary analysis. Besides, near to the study of fortifications whose decay is consolidated, an efficient analysis during the time of territory has not to be cancelled by various settings.

Massimiliano Francescutto, Marcin Piotrowski, Patrycja Piotrowska

Varmo di Sopra: preliminary research of a lost castle

The first information about Varmo family appear in written documents from the twelfth century.

A fourteenth-century document describes that the castle was surrounded on three sides by a river and there were four great towers just outside the town of Varmo.

The latest news says that the castle was partially destroyed in 1628 due to the flooding of the river Tagliamento.

This research has the purpose to inquire one of the so-called Water Castles, fortificated settings born near the waterways, whose fortune depends on strategical/functional site.

The first operations were conducted to identify the area in which could rise the castle now completely disappeared. After identifying the area that best preserves some of the elements described in the written sources, it was decided to carry out research with a magnetic survey of the land.

We want to present in this poster the first results of historical research and geomagnetic performed on the site of the castle of Sopra Varmo representing a solid foundation for the research study.

Drahomíra Frolíková

The transverse fortification of Prague Castle from 9th-10th century

The Prague Castle was a seat of dukes of Bohemia from 9th century. It is situated on the promontory and the oldest fortification cut the line of the access. This was a wooden wall and then a moat. The third phase was the new deeper moat with palisade and the fourth one a rampart with wooden construction and frontal stone screen. Stone screen was enlarged in the tenth century, and in its ground we found a stone with gravure of the geometric ornament.

Vedrana Glavaš

Discovering prehistoric Velebit hillforts: aerial reconnaissance and ground truthing

The karstic nature of the Velebit Mountain with its unique micro morphological traits impedes prehistoric cultural landscape research and makes it difficult to detect and study sites. Field surveys on Velebit have always yielded limited results on prehistoric landscape structures and this has greatly hampered further progress. Therefore, intensive aerial reconnaissance was carried out in order to discover new and document already known prehistoric hillforts and enclosures.

The application of aerial photography in archaeology is nothing new. Recently, aerial reconnaissance as a method of discovering and documenting sites rapidly developed in Croatia as well. At this poster the author will present the results of how aerial photography and ground truthing was used for discovering sites and interpreting architectural elements such as terraces or ramparts at hillforts and enclosures in the Velebit Mountian.

Soňa Hendrychová

Necropolises of Rajhrad and Rajhradice (Czech Repulic): an evidence of the existence of central site in Rajhrad?

The poster deals with the Great Moravia burial grounds in Rajhrad and Rajhradice in relation to the fort on the site of the later Rajhrad monastery. It aims to verify the possibility to assess the centrality of the location based on grave finds. Locations create a different impression. Rajhrad has a rural character and probably lasted longer than the burial ground Rajhradice that their characters very close to the Great Moravian burial sites in central locations. The existence of a settlement in Rajhrad not been archaeologically verified. Based on the analysis of burial grounds in Rajhrad and Rajhradice can responsibly say that in the vicinity of locations really found a central locality. It should be emphasized that the location of the central functions may not always be fortified and it is not necessary to prove the existence of its fortifications.

Ivan Huljev

Fortifications as liminal zones: example of Modern Age ramparts in Mandalina, Grebaštica and Primošten

Fortifications in the same time can present physical and symbolic barrier. Barrier which when is install splits the two spaces, internal and external, and on that way it changing relationship to space. In internal space residents feel safer, while external is unsafe, full of threats, how from enemy armys, so also from unknown peoples who can present threats, as thieves and similar.
Modern age ramparts of Mandalina, Oštrica near Grebaštica and Primošten were built under government of Venetian Republic, and they have a similar time of built (16th and 17th century). Also they are located on similar locations – two on peninsula, and one islet immediately next to the mainland.
Latter, when rampart was built, has linked islet and mainland with wooden bridge. These fortifications shared a similar method of construction, and also they are placed just under the landward side. Considering that the fortifications mainly studied as a physical barrier, in military and defense terms, in this presentation I will approach the problem in a slightly different way, looking at them through their social and symbolic component.

Andrej Janeš, Petar Sekulić

Grižane Castle – new historical and archaeological insight on a Vinodol castle

The Grižane castle is situated on the ridge of a steep slope dividing the regions of Gorski kotar and Vinodol, above the village of the same name. The today visible remains of the castle, situated on the eastern, highest, side of the ridge, consist

of two round towers that are connected by the walls. Walls of the habitations are preserved on the western edge of the ridge, over a deep precipice.

The local freemen were mentioned in written sources in the Law Codex of Vinodol from 1288. It was in the possession of the Counts of Krk (later Frangipan) till the 16th century. Till the end of the 17th century it belonged to the Zrinski kindred.

It was presumed by the historical data that the castle was built during the 13th century. From 2015 the Croatian Conservation Institute began documentation works on the still standing architecture. After a 3D laser scan and the analysis of the remaining walls it can be concluded that the architectural remains above Grižane village were built during the 15th century. The main features being the round towers provisioned with loops for cannons and walls provisioned with gunloops.

A reassessment of historical and archival data indicates that a castle (*castrum*) in Grižane is first mentioned in 1449 and that all the older references can be ascribed to a settlement. Also the nearby fort/castle of Badanj could be recognized as the predecessor of Grižane castle.

Anita Kocsis

GPR survey in Tokod Late Roman fort

The Late Roman fort in Tokod is situated 2.5 km south from the River Danube Hungary Komárom-Esztergom County. The contemporary sources mention the fort as Gardellaca/Cardabiaca. The first excavations were carried out by András Mócsy, in the 1960s. He opened several trial trenches in and around the fort, and he managed to uncover the defensive structures and parts of the internal layout. However, large parts of the internal area have remained unexplored until recently.

In November 2015 the Department of Archaeology and the Archaeological GIS Laboratory of Pázmány Péter Catholic University restarted the archaeological research in the fort. Initially, ground penetrating surveys were carried out in 2015 and 2016. The GPR surveys have covered 80 per cent of the internal area of the fort and revealed the ground plan of a dozen of hitherto unknown buildings and provided data on almost the entire internal layout of the fort. The trenches of the 2016 archaeological excavations were laid out on the basis of the aforementioned GPR surveys. The excavations confirmed the GPR results and helped refine the stratigraphy and chronology of one of the buildings. The GPR survey maps will be used for the planning of our future research.

Josef Matiášek

From Early Medieval hillfort to Post-Medieval stronghold – Development of fortifications of Prague Castle

The form of the fortification system of Prague Castle depended on the function of the place, the options of the period and georelief. The function of the place in the

preliterary early medieval period is still unclear, but several evidences of moat lines were detected. New hillfort with at least two separated areas was built in the early Přemyslid era. The fortification had three different forms depending on the level of accessibility. The place was the residence of the ruling dynasty and the central place of the church. The hillfort was rebuilt to a castle with stone rampart in the Romanesque period. In the High Middle Ages the castle was renovated by Holy Roman Emperor Charles IV and his son Venceslav IV. At the turn of the 15th and 16th century, Vladislaus Jagiello had strengthened the defense system by a new Zwinger competed by outposted towers. The first ruler of the Habsburg dynasty Ferdinand I. started with rebuilding the castle to the form of a Renaissance fortress.

Maja Soldo

Hill fort Mokro

Hill fort Mokro is settled in Široki Brijeg, the town at West Herzegovina. This is prehistoric, roman and early medieval fortress. West Herzegovina was part of the hinterland of roman province Dalmatia. Hill fort Mokro is one of the numerous hill forts in this area, but it is special because of its strategic position of the significant area. It is situated on a hill above the field. With three sides approach is naturally protected, and the fourth side is protected by the wall. It is the space above 180x60 metres. Mokro, some of the scientists consider as *Mokriskik*, the town mentioned in the *De administrando Imperio*, written by Constantine VII, 10th century. Placement *gradina* Mokro ensured the control of the wide area. At the top of plateau are noticed remains of a rectangular building and round tanks, made in stone with mortar. Surface findings are numerous, especially ceramic findings. This Hillfort protected the road leading from behind Brotnjo to Privalj, and Kočerin field, and the village below the fortress in which was discovered late antique basilica from 5th/6th century.

Igor Strikalov

Russian medieval fortifications of Staraya (Old) Ryazan

Staraya (Old) Ryazan - remnants of Russian city of XI-XIV AD, the former capital of the Ryazan principality. A short heyday of the city - XII-XIII centuries - was interrupted by the defeat of the Mongols in 1237. This defined the uniqueness of this site. 17 treasures are evidence of this tragedy. Ancient city of about 70 hectares is almost completely free from the later strata and modern buildings. It is surrounded by two well preserved rows of ramparts.

During some decades of its study fortifications of Old Ryazan were examined 3 times on the northern fort, 6 times in the South fort.

The results allow reconstructing the stages of construction of the walls and their designs. The walls of the North fort were built in the middle of the XI AD and reconstructed 4 times. Southern fortifications were built in the middle of the XII AD and also include 4 stages of restructuring.

Both walls at the first stage consisted of a line of separate wooden log cabins 2 x 3 m, filled with soil and sprinkled outside earthen slope, to ensure the safety of the walls from the fire, the destruction and elimination of "blind zone" at the base of the wall like a European talus. An additional element was berm at the base of the slope, followed by a moat. From inside the walls was strengthened by an additional line of hollow log cabins that serve as buttress and service spaces.

Subsequent reconstructions used various engineering solutions allows to keep stability and defenses of walls, erected on ground breaking walls of the previous stage. The scheme remained the same, only in the last stage of the Southern fortification wall changed the construction to connected wooden lines filled with soil (the so-called tarasa), the active use of which in Russia dates back to the XVI-XVII centuries.

Tatjana Tkalčec

Earthwork elements of defensive systems of small strongholds in the Kingdom of Slavonia

Small hillforts and lowland moated and mounded sites are found throughout the entire area bordered by the Drava and Sava rivers, in northern Pannonian part of Croatia, which in the Middle Ages was called as the Kingdom of Slavonia. They are located on naturally prominent positions on hilltops and slopes or in the plains where they often exploit local water courses and groundwater as an additional element of defense. There is evident concentration of such fortifications near settlements, main road communications and water courses. Their common characteristic are earthwork defensive systems such as earthen ramparts, mounds and ditches. Construction of earthen fortifications was a relatively small effort in comparison to expensive masonry work, especially in the regions where there was a lack of natural obstacles or the lack of nearby stone sources for masonry work. Their existence may be expected at sites where the surrounding areas were changed by subsequent reconstructions (inner colonisation) and expansions (13th century) and also in the times when danger from outer enemy is actual (15th cent., Turkish incursions).

The present-day archaeological understanding of their function and the time when they were raised indicates that they have served as fortified seats of feudal lords, and even more of the lower nobility, that is of their properties in the period between the 13th and 16th cent.

The aim of this paper is to identify elements of the defensive system – earth walls,

embankments, ditches, platforms, palisades, etc., which can be found in different types of these small castles. This insight will attempt to present their various applications, and to try to examine possible patterns in the organization of a given stronghold's defensive system.

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