



# DAY 1

Tuesday, May 30

9:00 **Registration and Coffee**

10:15 **Welcome** by Jiří Hošek  
**Opening lecture** by Philippe Dillmann

IRON IN MEDIAEVAL MONUMENTS: RESULTS OF 15 YEARS OF RESEARCH AND NEW PERSPECTIVES

*P. Dillmann, M. L'Héritier, A. Disser, S. Leroy, E. Vega, E. Delque-Kolic*

10:40 **Discussion**

10:45 **Morning Session** - chairman S. Orzechowski

10:45 RECYCLING AND SALVAGING FERROUS ALLOYS IN THE MIDDLE AGES: A COMMON PRACTICE? NEW INSIGHTS FROM TEXTS AND METALLOGRAPHIC ANALYSES

*M. L'Héritier*

11:00 FUNCTIONAL AND STRUCTURAL CHANGES OF THE IRON WORKSHOP OF CASTEL-MINIER, (1250 – 1580)

*F. Téreygeol, J.-C. Méaudre*

11:15 MEDIEVAL IRON SMELTING IN GIPUZKOA (BASQUE COUNTRY, SPAIN); ARCHEOLOGICAL RESEARCH ABOUT THE "HAIZEOLA"

*M. Urteaga*

11:30 A NEW TYPE OF SEMI-PRODUCT WITH A ROLLED EXTREMITY IN ILE-DE-FRANCE (FRANCE: TYPOLOGICAL, METALLOGRAPHIC AND PROVENANCE STUDY)

*S. Bauvais*

11:45 FABRICATION AND CIRCULATION OF MEDIEVAL ARMOR: AN ARCHAOMETRY APPROACH

*E. Bérard*

12:00 **Discussion**

12:20 **Lunch**

14:10 **First Poster Session**

HOW IT'S MADE – ARGUM'S PRACTICE AND METHODOLOGY USED FOR METALLOGRAPHIC ANALYSIS OF MEDIEVAL IRON ARTEFACTS FROM THE CARPATHIAN BASIN

*P. Barkóczy*

FIREproof – AN INTERNATIONAL IRONSMELTERS AND BLACKSMITHS FORUM AT ARTifacts – PRUSZKOW ARCHEOLOGICAL FESTIVAL AT THE MUSEUM OF ANCIENT MAZOVIAN METALLURGY IN PRUSZKOW, POLAND

*K. Brodowska, L. Sauder, D. Markewitz, J.J. Olesen, T.B. Haraldsen, M. Nissen, P. Madera, A. Wrona, W. Weker, M. Tomaszczyk*

THE MAZOVIAN CENTRE OF METALLURGY

*K. Brodowska*

SMELTING SLAGS AND SLAG INCLUSIONS. POOR MANS PROVENANCING OF IRON

*A. Jouttijarvi*

INVESTIGATION OF THE GREAT MORAVIAN 'ULFBERHT' SWORD FROM BŘECLAV-POHANSKO

*E. Ottenwelter, J. Košta, J. Hošek*

A COMPLEX COMPARATIVE STUDY OF EARLY MEDIEVAL SPLIT BLOOMS FROM PANNONIA

*B. Török*

THE USE OF COAL IN "LA CHAINE OPÉRATOIRE DU FER" TO LATE MIDDLE AGES IN THE NORTH OF FRANCE

*B. Jagou*

INVESTIGATION, CONSERVATION AND RECONSTRUCTION OF A MIGRATION-PERIOD SWORD

*P. Bárta, J. Hošek*

IRON SMELTING AT THE IRON AGE OPPIDUM OF STARÉ HRADSKO

*A. Frank-Danielisová, V. Beran*

14:40 **Change to the conference room**

14:50 **First Afternoon Session** - chairman E. Blakelock

14:50 EXCAVATIONS AT WETZLAR-DALHEIM II: EXPERIMENTAL IRON PRODUCTION

*G. Gassmann, A. Schäfer*

15:00 EXCAVATIONS AT WETZLAR-DALHEIM: DOUBTING RADIOCARBON DATING FROM SLAGS

*A. Schäfer*

15:10 THE LATE BLOOMERY: DIRECT IRON PRODUCTION IN EUROPE AFTER THE INTRODUCTION OF THE BLAST FURNACE

*P. Rondelez*

15:20 LARGE SCALE BLOOMERY PRODUCTION IN SE SWEDEN

*G. Magnusson*

15:30 A VIKING HOARD OF IRON BLOOMS: IRON PRODUCTION AT A CHIEFTAIN'S FARM IN VATNSFJÖRÐUR, NORTHWEST ICELAND

*T. Birch, K. Milek, D. Mooney, G. A. Gísladóttir, G. Guðmundsson*

15:40 **Discussion**

16:00 **Coffee Break**

16:30 **Second Afternoon Session** - chairman V. Serneels

16:30 ARCHAEOLOGICAL AND HISTORICAL DATA FOR THE HEAVY, UNIQUE SPLIT IRON BLOOMS FOUND IN PANNONIAN LATE ROMAN FORTRESSES

*J. Gömöri, O. Heinrich-Tamáská*

16:45 BEFORE OR AFTER? STRATIGRAPHICAL RELATIONS OF THE SLAG – PIT FURNACES ON SOME IRON AGE SETTLEMENTS IN THE MAZOVIAN CENTER OF METALLURGY. A NOTE ON THE DATING OF IRON AGE BLOOMERY FIELDS

*R. Janiszewski*

17:00 CLIMATE, ECONOMY AND IRON. NEW LOOK ON THE IRONWORKING CENTRE IN NORICUM

*S. Modzelewski*

17:15 ONE OF 150 000 – HOW TO “READ” FURNACE ARTIFACTS FROM MAZOVIAN CENTRE OF METALLURGY

*K. Brodowska*

17:30 THE IRON PRODUCTION CENTER OF THE WIELBARK CULTURE IN WEST POMERANIA, POLAND

*A. Błazejewski, A. Chmielowska*

17:45 SOCIO-ECONOMIC DETERMINANTS OF IRON PRODUCTION ON POLISH LANDS DURING ANTIQUITY - THE PHENOMENON OF METALLURGICAL SMELTING CENTRES OF THE PRZEWORSK CULTURE

*S. Orzechowski*

18:00 **Discussion**

18:20 **End**



# DAY 2

Wednesday, May 31

## 9:00 First Morning Session - chairman A. Giunlia-Mair

9:00 PATHWAYS IRON INDUSTRY IN EASTERN EUROPE

*V. Zavyalov, N. Terekhova*

9:15 THE BEGINNING OF IRON METALLURGY IN THE LOWER DANUBE AREA. A CASE STUDY ON THE IRON SLAG FROM THE BABADAG SETTLEMENT (DOBRUJA, ROMANIA)

*C. Cozma, N. Cimpoeșu, S.-C. Ailincăi, F. Mățău*

9:30 TransFER – NEW RESEARCH PROJECT ON IRON PRODUCTION IN DRAVA RIVER VALLEY

*T.S. Ivančan, I.M. Hrovatin*

9:45 THE BLOOMERY PROCESS – IRON QUALITIES FROM LATE BRONZE AGE TO THE VIKING AGE (1000 BC–1000 AD) IN SWEDEN

*L. Grandin, E. Ogenhall, E. Hjärthner-Holdar*

10:00 Discussion

## 10:15 Coffee Break

## 10:45 Second Morning Session - chairman *to be confirmed*

10:45 REFLECTIONS ON THE FORM OF ANCIENT IRON BLOOMS OBTAINED IN SLAG-PIT FURNACES FROM METALLURGICAL CENTRE IN THE ŚWIĘTOKRZYSKIE MOUNTAINS

*A. Wrona*

11:00 HOW TO MAKE BLOOMS, LIKE ANCIENTS SMELTERS. OR HOW TO BE CHALLENGED TO MAKE MY BIGGEST BLOOM EVER

*J. J. Olesen*

11:15 SLAG-PIT BLOOMERY FURNACE TARCHALICE TYPE – RECONSTRUCTION AND EXPERIMENTAL RESEARCH

*P. Madera, D. Kik, I. Suliga*

11:30 THE BLOOMERY FURNACES OF THE MONTAGNE NOIRE (FRANCE), INSTRUCTIONS FOR USE. RESULTS OF TWENTY YEARS OF EXPERIMENTS, BETWEEN ARCHAEOLOGY AND ARCHAEOMETRY

*M.-P. Coustures, D. Béziat*

11:45 AIR FLOW RATE CALCULATIONS FOR NATURAL DRAFT SMELTING FURNACES

*S. Perret*

12:00 Discussion

## 12:20 Lunch

## 14:10 Second Poster Session

MANUFACTURE AND LIFE CYCLE OF AN IRON KNIFE

*E. Blakelock*

FROM HARD ROCK TO HEAVY METAL - EARLY IRON PRODUCTION IN A HUNTING- AND GATHERING COMMUNITY IN NORTHERN SWEDEN

*C. Bennerhag*

CAST IRON AND REFRACTORY FIREBRICKS FROM A LATE 17TH CENTURY BLOOMERY FURNACE: THE FINAL PHASE OF INNOVATION IN CUMBRIAN BLOOMERY SMELTING

*P. Crew, M.F. Charlton, B. Gilmour, J. Procter*

THE CLASSIC BLOOMERY FURNACE (1ST CENTURY B.C.) AT LES MARTYS (SOUTHERN FRANCE)

*C. Domergue, J.-M. Fabre*

FIRST RESULTS CONCERNING MANUFACTURING PROCESSES OF THE FIRST IRON ALLOY ITEMS FROM THE HABITAT OF CUCIURPULA (CORSE-DU-SUD, FRANCE) BETWEEN THE VIIIIE AND VIIE CENTURY BC

*A.-L. Grevey*

FIRST IRON KNIVES IN NORTHERN IBERIA (8TH-6TH CENTURIES BC): FUNCTION, TIPOLOGY AND TECHNOLOGY

*M. C. Rovira-Hortalà*

IRON OF THE IBERIAN WARRIORS: ARCHAEOMETALLURGICAL STUDY OF A SWORD FROM PUIG DE SANT ANDREU – ULLASTRET (GIRONA, SPAIN)

*M. Gener Moret, M. C. Rovira-Hortalà*

THE PROTOHISTORICAL IRONWORKING IN PRAGUE-BUBENEČ. AN INDUSTRIAL SITE UNDER THE MICROSCOPE

*D. Bursák*

THE DEVELOPMENT OF IRON ORE RESOURCES BY MIDDLE VOLGA REGION PREHISTORIC AND MEDIEVAL POPULATION

*Y. Semykin, L. Vyazov, E. Shaikhutdinova*

14:40 Change to the conference room

14:50 **First Afternoon Session** - chairman P. Dillmann

14:50 THE 7TH-6TH CENTURY BC IRON SMELTING FURNACE OF LA PASTORA MINE (ALISEDA, CACERES, (SPAIN). THE EARLIEST EVIDENCE OF TAPPED SLAGS IN SPAIN

*S. Rovira*

15:00 NON-TAPPING IRON-SMELTING FURNACES IN SOUTHERN BRITAIN

*T. Young*

15:10 FURNACE TYPES IN THE BLOOMERY PROCESS FROM LATE BRONZE AGE TO THE VIKING AGE (1000 BC TO 1000 AD) – ARE THERE VARIATIONS IN MORPHOLOGY DUE TO FUNCTIONAL, REGIONAL OR CHRONOLOGICAL REASONS?

*E. Hjärthner-Holdar*

15:20 ONE OF THE LARGEST EARLY MEDIEVAL UNEARTHED FERROUS METALLURGICAL CENTRE OF EUROPE IN ZAMÁRDI (HUNGARY) – COMPREHENSIVE DESCRIPTION AND THE ARCHAEOLOGICAL EXAMINATIONS OF LOCAL SLAGS

*B. Török*

15:30 NEW LIGHT ON OLD IRON: RECENT WORK ON IRON AGE IRON PRODUCTION, CONSUMPTION AND DEPOSITION IN THE UK

*P. Halkon*

15:40 **Discussion**

16:00 **Coffee Break**

16:30 **Second Afternoon Session** - chairman J. Hošek

16:30 THE EARLIEST EVIDENCE OF IRON METALLURGY IN THE CIRCUMPOLAR REGION OF ASIA (SOURCE: UST-POLUI EXCAVATIONS IN 2010–2015)

*E. Vodyasov*

16:45 IRON WORKING AT IRON AGE (10TH-9TH CENTURY BCE) TEL MEGIDDO AND TELL ES-SAFI/GATH, ISRAEL: COMPARATIVE ANALYSIS OF WORKING DEBRIS AND PARAPHERNALIA

*V. Workman, A. Eliyahu-Behar*

17:00 IRON ORE SOURCES OF THE SOUTHERN LEVANT DURING THE IRON AGE; PRELIMINARY CHEMICAL AND ISOTOPIC ANALYSIS

*A. Eliyahu-Behar*

17:15 MULTIPHASE IRON-STEEL OBJECTS FROM MEDIEVAL ANATOLIAN SELJUQS: CLASSIFICATION AND PRODUCTION TECHNIQUES

*Ü. Güder, C.C. Taşan, A. Yava*

17:30 AN EXPERIMENTAL STUDY OF IRON SMELTING TECHNIQUES USED IN THE SOUTH EAST RAJASTHAN WITH SPECIAL REFERENCE TO NATHARA-KI-PAL, UDAIPUR

*S. Udayakumar*

17:45 ITUTINGA IRON METEORITE IN APPLIED METALLURGICAL AND ARCHAEO METALLURGICAL PROCESS

*G.A. Nunes, A.R. Da Costa*

18:00 **Discussion**

18:20 **End**

19:00 **Conference Dinner**



# DAY 3

Thursday, June 1

## 9:00 First Morning Session - chairman A. Williams

9:00 THE ANCIENT STEEL SWORD TECHNOLOGY REVEALED THROUGH NEUTRON IMAGING

*F. Grazzi*

9:15 IRON IN IRON AGE SCOTLAND

*G. Cruickshanks*

9:30 IRON, AUTOCHTHONY AND THE MAKING OF ANCIENT GREECE

*M. Kostoglou*

9:45 DEVELOPMENT PROCESS TO THE JAPANESE TRADITIONAL IRON SMELTING TATARA

*Y. Murakami*

10:00 Discussion

## 10:15 Coffee Break

## 10:45 Second Morning Session - B. Gilmour

10:45 A NEW ANALYSIS OF THE SPREAD OF IRON TECHNOLOGY IN AFRICA

*L. Iles, K. Manning, A. Timpson*

11:00 ANCIENT IRON PRODUCTION AT THE ROYAL CITY OF MEROE, SUDAN

*J. Humphris*

11:15 SIZE – NECESSARY, BUT SUFFICIENT? PYROTECHNICAL UPGRADE IN RECENT KANIASSO, IVORY COAST: FROM KAN 2 TO KAN 3

*M. Bonta*

11:30 AN INTEGRATED ARCHAOMETALLURGICAL TYPOLOGY OF ARCHITECTURAL CRAMPONS AS A METHOD FOR RECONSTRUCTING THE IRON ECONOMY OF ANGKOR, CAMBODIA (10TH TO 13TH C.).

*S. Leroy, M. Hendrickson, A. Disser, E. Vega, P. Dillmann, E. Delque-Kolic, P. Venunan, C. Pottier, S. Bauvais, T. Blanchet*

11:45 THE MASS PRODUCTION OF IRON IN WEST AFRICA AND ITS SIGNIFICANCE

*V. Serneels*

12:00 Discussion

## 12:20 Lunch

## 14:10 Third Poster Session

EARLY MEDIEVAL IRON PRODUCTION IN PODRAVINA - NW CROATIA

*I.M. Hrovatin*

MILANÓWEK-FALĘCIN – SETTLEMENT OF THE ANCIENT IRON SMELTERS

*M. Woźniak*

SHAYTAN MEDIEVAL AREA – THE BIGGEST MINING AND IRON PRODUCTION COMPLEX OF ARCHAEOLOGICAL SITES IN WESTERN SIBERIA

*O. Zaitceva, E. Vodyasov*

THE CHEMICAL VARIATION OF MAJOR SIGNATURE IN AN IRON PRODUCTION REGION: THE EXAMPLE OF THE “PYRÉNÉES-ORIENTALES” AND THE CANIGOU MOUNTAIN (FRANCE) BETWEEN ANTIQUITY AND MODERN PERIOD

*E. Vega, P. Dillmann, S. Leroy, P. Gaspard*

EAST AFRICAN IRON PRODUCTION PROCESSES AND PRODUCTS IN 7TH-10TH CENTURIES AD

*E. Bauzyte*

LATE MEDIEVAL AND EARLY MODERN SMITHY SITE OF KÄKU, ESTONIA

*R. Saage, J. Peets*

MODELING BLOOMERY PROCESSES ON ANCIENT RUS FURNACE

*M. Ratkin, V. Zavyalov, N. Terekhova*

MEDIAEVAL PROCESSING OF IRON ORES IN THE CENTRAL PART OF MORAVIA - ARCHAEOLOGY & EXPERIMENTS

*O. Merta*

INVESTIGATION OF MEDIEVAL KNIVES FROM CROATIA

*A. Thiele, N. Antonić, T. Á. Rácz, J. Hošek*

14:40 Change to the conference room

14:50 **First Afternoon Session** - chairman V. Zavyalov

14:50 METALLOGRAPHIC EXAMINATION OF FOUR 7TH-8TH CENTURY LONG-BLADE WEAPONS FROM ŽELOVCE (SLOVAKIA)  
*J. Hošek, M. Haramza*

15:00 HELMETS AND BODY ARMOUR IN THE 14TH CENTURY - THE TRIUMPH OF AN INDUSTRY  
*A. Williams*

15:10 THE METALLURGY OF SOME LATE MEDIEVAL HELMETS IN THE WALLACE COLLECTION AND ELSEWHERE  
*D. Edge*

15:20 IRON FINDS FROM A LATE ANTIQUE WORKSHOP IN FIESOLE, ITALY  
*B. Gilmour, A. Giumlia-Mair*

15:30 SINGLE EDGED SWORDS - CHANGES IN TECHNOLOGY AND THE KNOWLEDGE OF STEEL  
*A. Jouttijarvi*

15:40 **Discussion**

16:00 **Coffee Break**

16:30 **Second Afternoon Session** - chairman B. Török

16:30 THE ROMAN SEMI-PRODUCT OF THE NORTH-WESTERN MEDITERRANEAN: TYPOLOGY, QUALITY, DISTRIBUTION, CHRONOLOGY AND PROVENANCE  
*G. Pagès, S. Leroy, E. Vega, P. Dillmann, E. Delqué-Kolic, P. Fluzin, L. Long*

16:45 PRODUCING, EXCHANGING AND HOARDING IRON. THE CURRENCY-BARS HOARDS NEAR THE ARISTOCRATIC RESIDENCE OF THE CAMP DU CHÂTEAU IN SALINS-LES-BAINS (JURA – FRANCE)  
*M. Berranger, P. Fluzin, S. Leroy, A. Disser, E. Vega, M. Aubert, P. Dillmann*

17:00 IRON AGE IRON PRODUCTION IN SCOTLAND AND BEYOND  
*S. Stetkiewicz*

17:15 THE CIRCULATION OF IRON PRODUCTS IN EASTERN FRANCE AND SOUTHERN GERMANY DURING THE LATE HALLSTATT AND EARLY LA TÈNE : COMBINED ELEMENTAL AND ISOTOPIC APPROACHES FOR PROVENANCE OF IRON  
*A. Disser, S. Bauvais, R. Schwab, P. Dillmann, M. Brauns, S. Leroy, G. Gassmann*

17:30 "CHAÎNE OPERATOIRE" FOR CELTIC-ROMAN BLOOMERY FURNACES IN MID-NORWAY  
*A. Espelund*

17:45 **Discussion**

18:05 **Closing**

18:15 **End**