



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

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

THE MANUFACTURING TECHNOLOGY OF A PATTERN-WELDED KNIFE FROM KOBILIĆ

A. Thiele

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-Tamáska

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. Błażejowski, 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, V. Vignal, K. Pêche-Quilichini, D. Grevey, E. Gailledrat, M.C. Belarte

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-Llorens, M. Renzi, I. P. Soldevila, D.M.D. Espino, A.R. Díaz

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. Yavaş

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 - chairman 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

M. Barák, O. Merta, D. Talla

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

E. Ottenwelter, J. Košta, 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**