MEDPALYNOS 2021
06-08 September · MODENA · Italy

MEDPALYNOS 2021 - SCIENTIFIC PROGRAMME

6 September 2021	
Morning	
9.00 - 9.20	Opening ceremony A.M.**Mercuri**, President of GPP-SBI V.**Lebreton**, President of L'APLF P.S.**Testillano**, President of APLE A.**Florenzano**, MedPalynos 2021 President
9.20 - 11.15	**S1** - Pollen biology and structure Chairs: P.S.Testillano, G.Aronne Invited speaker: **J.Lora**, IHSM-UMA-CSIC, Spain
11.15 - 11.30	*Break*
11.30 - 12.15	**S2** - Melissopalynology Chairs: A.M.Mercuri , A.-V.González-Porto
12.15 - 13.00	***Poster session 1*** *Chairs: G.Servera-Vives, E.Clò*
Afternoon	
14.00 - 15.30	**S3** - Paleopalynology (forests and mountains) Chairs: G.Servera-Vives, D.Attolini Invited speaker: G. **Piovesan**, University of Tuscia, Italy
15.30 - 15.45	*Break*
15.45 - 17.00	**S4** - Paleopalynology (vegetation, landscape and land use) Chairs: C.Zorzi, J.Revelles
from 17.00	*Virtual tour of Modena and Terramara di Montale*

7 September 2021	
Morning	
9.00 - 10.45	**S5** - Paleopalynology ('modern analogues') Chairs: V.Lebreton, A.Picornell Invited speaker: L.**Marquer**, University of Innsbruck, Austria
10.45 - 11.00	*Break*

11.00 - 12.00	**S6** - Aeropalynology (methods in Aerobiology) Chairs: M.P.Plaza, A.Travaglini
12.00 - 13.00	***Poster session 2*** *Chairs: G.Servera-Vives, E.Clò*
Afternoon	
14.00 - 15.30	**S7** - Paleopalynology (Quaternary climate and vegetation changes) Chairs: A.Penaud, K.Kouli
15.30 - 15.45	*Break*
15.45 - 17.15	**S8** - Paleopalynology (Holocene environmental changes) Chairs: A.Masi, S.Joannin
17.15 - 18.00	*Voting for the best poster*

8 September 2021	
Morning	
9.00 - 10.00	**S9 - *Bridging session between MedPalynoS and the Italian Botanical Society*** Chairs: A.M.Mercuri, A.Chiarucci Invited speaker: S.A.**Mensing**, University of Nevada, US
10.00 - 10.30	Ceremony award A.**Chiarucci**, President of SBI A.M.**Mercuri**, President of GPP-SBI
10.30 - 10.45	*Break*
10.45 - 12.30	**S10** - Archaeopalynology Chairs: A.Florenzano, S.Pérez-Díaz
12.30 - 12.45	Closing remarks

Conference Agenda

Session

S1: POLLEN BIOLOGY AND STRUCTURE

Time: **Monday, 06/Sept/2021: 9:20am - 11:15am**
Session Chair: **Pilar S. Testillano**
Session Chair: **Giovanna Aronne**

Presentations

9:20am - 10:00am

POLLEN DEVELOPMENT AND POLLEN-PISTIL INTERACTION. IMPLICATIONS FOR FRUIT TREE CROP BREEDING

Jorge Lora, Iñaki Hormaza
Institute for Mediterranean and Subtropical Horticulture "La Mayora" (IHSM-UMA-CSIC), Spain; jlora@eelm.csic.es

Pollen development is a highly conserved process with intense crosstalk between the male germline and the sporophytic tissues. Interaction continues between pollen and pistil, in which the female sporophyte both supports and constrains pollen tube growth. Pollen development and pollen-pistil interaction are, therefore, essential processes for the subsequent fruit set that is of central importance in fruit tree crops.

10:00am - 10:15am

INVOLVEMENT OF ENDOGENOUS CYTOKININS IN MICROSPORE EMBRYOGENESIS OF BRASSICA NAPUS

Yolanda Pérez-Pérez[1], Alfonso Albacete[2,3], Pilar S. Testillano[1]
[1]Pollen Biotechnology of Crop Plants group, Biological Research Center Margarita Salas, CIB-CSIC, Ramiro de Maeztu 9, 28040 Madrid, Spain; [2]Department of Plant Nutrition, CEBAS-CSIC, Campus Universitario de Espinardo 25, 3100 Murcia, Spain; [3]Department of Plant Production and Agrotechnology, Institute for Agri-Food Research and Development of Murcia, IMIDA, c/ Mayor s/n, 30150 La Alberca, Murcia, Spain; yperez@cib.csic.es

Stress-induced microspore embryogenesis is used in breeding to rapidly obtain doubled-haploid plants. The hormonal regulation of the process is not well understood. In the present work we analyzed the dynamics and role of endogenous cytokinins (CKS) during microspore embryogenesis in Brassica napus. The results indicate that CKS increase and play a key role in microspore-derived embryo differentiation.

Funding: AGL2017-82447-R, PDI2020-113018RB-I00

10:15am - 10:30am

HEAT TREATMENT DURING MICROSPOROGENESIS AFFECTS THERMO-TOLERANCE AND ONTOGENESIS OF TOMATO POLLEN

Maurizio Iovane, Giovanna Aronne
Department of Agricultural Sciences, University of Naples Federico II; maurizio.iovane@unina.it

Experimental data on Solanum lycopersicum 'Micro-Tom' confirmed our hypothesis that high temperatures on flower buds during microsporogenesis slightly lower pollen viability at anthesis but become drastically manifest later on the male gametophyte. Further, microscope analysis revealed that heat reduces the life span of the gametophytic generation.

10:30am - 10:45am

IDENTIFICATION OF CANDIDATE GENES DETERMINING THE MORPHOLOGY OF POLLEN GRAIN APERTURES BY TRANSCRIPTOMIC ANALYSIS IN PAPAVERACEAE

Ismael Mazuecos Aguilera, Ana Teresa Romero García, Víctor N. Suárez Santiago
Department of Botany, Faculty of Sciences, University of Granada, Spain; ismaag@ugr.es

Pollen grain aperture pattern is very diverse between species. However, little is known about its genetic determinism. We carried out a comparative study of the transcriptome of two species of Papaveraceae with colpo-type apertures and two others with pore-type apertures. Thus we identify genes that could potentially be involved in determining the type of aperture.

10:45am - 11:00am

SCANNING ELECTRON MICROSCOPY REVEALS STRUCTURE OF POLLEN GRAINS OF MALE AND FEMALE WILD GRAPEVINE (VITIS VINIFERA SUBSP. SYLVESTRIS GMEL HEGI) IN CROATIA

Katarina Lukšić[1], Goran Zdunić[1], Ana Mucalo[1], Luka Marinov[1], Zorica Ranković-Vasić[2], Jelena Ivanović[2], Dragan Nikolić[2]
[1]Institute for Adriatic Crops and Karst Reclamation, Put Duilova 11, 21 000 Split, Croatia; [2]University of Belgrade, Faculty of Agriculture, Nemanjina 6, 11080 Belgrade-Zemun; katarina.luksic@krs.hr

The Eurasian grapevine (Vitis vinifera L.) includes two subspecies: wild (V. subsp. sylvestris) and cultivated (V. subsp. vinifera), both are diploid and sexually compatible.

Scanning Electron Microscopy revealed clear separation between male and female V. sylvestris morphotypes based on pollen microstructure of accessions from two Croatian natural populations providing information for future studies on the pollen and flower of grapevine.

11:00am - 11:15am

DOES POLLEN RELEASE EXOSOMES?

Chiara Suanno[1], Elisa Tonoli[2], Enzo Fornari[3], Maria Pia Savoca[2], Iris Aloisi[1], Luigi Parrotta[1], Elisabetta Verderio-Edwards[1,2], Stefano Del Duca[1]
[1]University of Bologna, Italy; [2]Nottingham Trent University; [3]Healthy Stuff; chiara.suanno3@unibo.it

We tested the hypothesis that nanoparticles released by pollen could be plant exosomes. To do so, we isolated nanoparticles with a diameter smaller than 200 nm from hydrated and germinated kiwi pollen. We then visualised the vesicles in atomic force microscopy and fluorescence microscopy, and assayed the presence of the homologs of ALIX, a mammalian exosome marker, in western blot.

Conference Agenda

Session

S2: MELISSOPALYNOLOGY

Time: **Monday, 06/Sept/2021: 11:30am - 12:15pm**
Session Chair: **Anna Maria Mercuri**
Session Chair: **Amelia-Virginia González-Porto**

Presentations

11:30am - 11:45am

NOTES ON THE POLLEN CONTENT OF HONEYS FROM THE MIDDLE-WEST OF THE IBERIAN PENINSULA (SALAMANCA, SPAIN) LABELLED AS SPANISH LAVENDER HONEYS

David Rodríguez de la Cruz[1,2], Estefanía Sánchez-Reyes[1], Alfredo García-Sánchez[1], Silvia Sabariego-Ruiz[3], Silvia Sánchez-Durán[1], José Sánchez-Sánchez[1,2]

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Pollen studies in honeys are fundamental tools to determine their botanical and geographical origin. 20 samples of honey collected in the MW Spain during the year 2018 and catalogued as "Spanish lavender"by beekeepers were analysed. of which only one was characterised as such according to palynological criteria. This underlines the importance of melissopalynology in the determination of monofloral honeys.

11:45am - 12:00pm

MELISSOPALYNOLOGICAL AND PHYSICOCHEMICAL ANALYSIS OF HEATHER HONEY (ERICA ARBOREA L.) FROM THE REGION OF BABORS KABYLIA (ALGERIA)

Asma Ghorab[1], Farid Bekdouche[2], Maria Shantal Rodríguez Flores[1], Olga Escuredo[1], Maria Carmen Seijo[1]

[1]University of Vigo, Spain; [2]University of Moustafa Ben Boulaid, Batna 2, Algeria; asma.ghorab@uvigo.es

The characterization of heather honey from Babors Kabylia provides information on the diversity of beekeeping resources and the main physicochemical characteristics, which are important for honey marketing and quality control. The honey had a mean value of 54.25 % of E. arborea pollen and a good quality. The obtained parameters could be characteristics for heather honey from this region.

12:00pm - 12:15pm

BOTANICAL ORIGIN OF HONEYS FROM THE "SIERRA DE MANANTLÁN" BIOSPHERE RESERVE, JALISCO, MEXICO

Xochilt María Morales Najarro[1], Iris Grisel Galván-Escobedo[1], Monserrat Vázquez-Sánchez[1], Ma. de Montserrath Medina-Acosta[2]

[1]COLEGIO DE POSGRADUADOS, Campus Montecillo, Mexico; [2]UNIVERSIDAD AUTÓNOMA METROPOLITANA, Unidad Iztapalapa, Mexico; moraleschochil@gmail.com

As of the aplication of melisopalynology techniques and the calculation of alpha index of diversity and simility of the polen sets between apiaries was possible to define the botanical origin of the honeys produce in "Sierra de Manantlán" Biosphere Reserve. Results indicated a clear differentiation between the pollen composition of the honey samples.

Conference Agenda

Session

S3: PALEOPALYNOLOGY (FORESTS AND MOUNTAINS)

Time: **Monday, 06/Sept/2021: 2:00pm - 3:30pm**
Session Chair: **Gabriel Servera-Vives**
Session Chair: **Davide Attolini**

Presentations

2:00pm - 2:40pm

THE ROLE OF HISTORICAL ECOLOGY IN THE CONSERVATION AND RESTORATION OF MEDITERRANEAN FORESTS

Jordan Palli, Gianluca Piovesan
Department of Agriculture and Forest Sciences (DAFNE), University of Tuscia, via san Camillo de Lellis, snc, 01100, Viterbo, Italy; jo.palli@unitus.it

Ecological landscape planning should be based on a clear understanding of forest dynamics. Palynology, archaeobotany and dendroecology combined provide detailed information on compositional and structural changes of forests, thus providing insights into the capacity of the ecosystem to face changing environmental conditions. The integration of such disciplines can be pivotal to reconstruct the vegetation history and discriminate drivers of change.

2:40pm - 2:55pm

GLOBAL CHANGES, FIRE AND SPRUCE-FOREST DYNAMICS IN QUEBEC-LABRADOR DURING THE HOLOCENE.

Jonathan Lesven[1], Milva Druguet Dayras[2], Laurent Millet[1], Adam Ali[2], Yves Bergeron[3], André Arsenault[4], François Gillet[1], Damien Rius[1]
[1]Chrono-Environnement Laboratory (UBFC), France; [2]Institut des Sciences de l'Evolution de Montpellier, France; [3]Université du Québec en Abitibi-Témiscamingue, Canada; [4]Canadian Forest Service, Atlantic Forestry Centre, Canada; jonathan.lesven@univ-fcomte.fr

Boreal forests are necessary for human activities and climate regulation. Based of pollen grains, macrocharcoal and chironomids assemblages of a canadian transect, this multi-proxy study provides new insights on fire-climate-vegetation linkages to characterize the mechanisms by which climate change impacts disturbance regimes. It shows that repeated fires across time can alter vegetation composition and trajectory, and thus carbon sink function.

2:55pm - 3:10pm

A MILLENNIUM-LONG HISTORY OF AN ICONIC OLD-GROWTH FOREST IN SOUTH-EAST EUROPEAN MOUNTAINS

Eleonora Cagliero[1,2], Donato Morresi[3], Laure Paradis[2], Niccolò Marchi[1], Fabio Meloni[3], Milić Čurović[4], Velibor Spalevic[5], Ilham Bentaleb[2], Renzo Motta[3], Matteo Garbarino[3], Walter Finsinger[2], Emanuele Lingua[1]
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Major human imprints on many forest ecosystems are viewed as causes for today low abundance of European old-growth forests. However, their long-term history is weakly constrained. Our study contributes to evaluate the history and legacies of past human impacts on an iconic European old-growth forest in the Dinaric mountains (Montenegro). The methodology combines field plots, remote sensing and palaeoecological analyses.

3:10pm - 3:25pm

HIGH-ELEVATION VEGETATION DYNAMICS ON THE CANTABRIAN RANGE (NORTHERN SPAIN) DURING THE PAST TWO MILLENNIA: THE LAGO DEL AUSENTE PALAEOECOLOGICAL RECORD

César Morales-Molino[1], Maria Leunda[1,2], Mario Morellón[3], Jon Gardoki[3,4], Javier Ezquerra[5], Castor Muñoz Sobrino[6], Manel Leira[7], Willy Tinner[1]
[1]University of Bern, Switzerland; [2]Federal Institute for Forest, Snow and Landscape Research WSL, Switzerland; [3]Universidad Complutense de Madrid, Spain; [4]Universidad del País Vasco UPV/EHU, Spain; [5]Junta de Castilla y León, Spain; [6]Universidade de Vigo, Spain; [7]Universidade da Coruña, Spain; cesar.morales@ips.unibe.ch

The number of available palaeoecological records from the Cantabrian Range has significantly increased during the past few decades, contributing to fill many gaps in the knowledge about the Lateglacial and Holocene vegetation dynamics of this region. However, detailed and well dated records focusing on the late Holocene are very rare.

Conference Agenda

Session

S4: PALEOPALYNOLOGY (VEGETATION, LANDSCAPE AND LAND USE)

Time: **Monday, 06/Sept/2021: 3:45pm - 5:00pm**
Session Chair: **Coralie Zorzi**
Session Chair: **Jordi Revelles**

Presentations

3:45pm - 4:00pm

LANDSCAPE DYNAMICS DURING THE LAST GLACIAL TRANSITION TO THE HOLOCENE IN THE NORTHERN IBERIAN PENINSULA. LA MOLINA PEAT BOG, CANTABRIA

Marc Sánchez-Morales[1], Ramon Pérez-Obiol[2], Juan Carlos García-Codrón[3], Virginia Carracedo-Martín[3], Sara Rodríguez-Coterón[3], Joan Manuel Soriano[1], Jordi Nadal-Tersa[1], Aaron Pérez-Haase[4], Albert Pèlachs[1]

[1]Department of Geografia, Universitat Autònoma de Barcelona, Spain; [2]Department of Biologia Animal, Biologia Vegetal i Ecologia, Universitat Autònoma de Barcelona, Spain; [3]Department of Geografía, Urbanismo y Ordenación del Territorio, Universidad de Cantabria, Spain; [4]Department of Biociències, Universitat de Vic-Universitat Central de Catalunya, Spain; marc.sanchez.morales@uab.cat

A multiproxy approach performed in La Molina peat bog (Cantabria, 484 m a. s. l.), which combined analyses on pollen, charcoals (>125 µm) and organic matter, revealed the landscape dynamics for the last 17,552 cal. yr BP. This exceptional sequence provides climatic, vegetation and fire data according to the long-term environmental history of the North Atlantic climate variability.

4:00pm - 4:15pm

VEGETATION, HUMAN PRACTICES AND CLIMATE CHANGES DURING THE LAST 15000 YEARS RECORDED AT LAKE MATESE, IN ITALY

Mary Robles[1,2], Elisabetta Brugiapaglia[1], Odile Peyron[2], Guillemette Ménot[3], Bruno Paura[1], Sabine Wulf[4], Oona Appelt[5], Jacques-Louis De Beaulieu[6], Sébastien Joannin[2]

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The aims of this study are (1) to understand modern pollen-vegetation relationships in Matese massif and (2) to reconstruct vegetation, human practices and climate changes recorded in the Lake Matese sediment archive during the last 15000 years using geochemistry (XRF), pollen and Non-Pollen Palynomorphs (NPPs).

4:15pm - 4:30pm

PALEOENVIRONMENTAL RECONSTRUCTIONS SINCE MESOLITHIC ALONG THE SOUTH BRITTANY COAST (BAY OF QUIBERON AND SOUTH-GLENAN SECTOR, FRANCE)

Ophélie David[1,2], Aurélie Penaud[2], Muriel Vidal[2], Evelyne Goubert[1], Maiwenn Herlédan[3], Axelle Ganne[2], Jean-françois Bourillet[4], Agnès Baltzer[5]

[1]Université Bretagne Sud, UMR 6538 Laboratoire Géosciences Océan, France; [2]Université de Bretagne Occidentale, UMR 6538 Laboratoire Géosciences Océan, France; [3]Université de Lille, UMR 8187 Laboratoire d'Océanologie et de Géosciences, France; [4]Ifremer, Géosciences Marines, Centre de Bretagne, France; [5]Université de Nantes, CNRS-UMR 6554 Laboratoire Géolittomer/IGRUN, France; ophelie.david@univ-ubs.fr

New results acquired on the southern Brittany shelf allow depicting Holocene coastal paleoenvironmental changes from the Mesolithic to the Middle Ages through a multi-proxy dataset (sedimentological and palynological analyses). Thanks to a well-understood sedimentological framework, palynological data and anthropogenic signal are discussed in light of the millennial to multi-millennial scale mechanisms imprint (i.e., SPG and NAO) on coastal sedimentary records.

4:30pm - 4:45pm

PALYNOLOGY FROM LAKE FAIDEH: ENVIRONMENTAL CHANGES AND HUMAN INFLUENCE IN UPPER MESOPOTAMIA (CA. 32,000 - 8,000 BC)

Jessica Zappa[1], Luca Forti[1,3], Assunta Florenzano[2], Anna Maria Mercuri[2], Eleonora Regattieri[3], Andrea Zerboni[1]

[1]Università degli Studi di Milano, Italy; [2]Università degli studi di Modena e Reggio Emilia, Italy; [3]Istituto di Geoscienze e Georisorse CNR, Pisa, Italy; jessica.zappa@studenti.unimi.it

In this contribution we want to present the preliminary results of the palynological analysis of the Faideh fluvio-lacustrine sequence, located in the northwestern Kurdistan Iraqi Region (KRI).

The study is part of a multidisciplinary project aimed at reconstructing the evolution of the Late Quaternary landscape of Upper Mesopotamia.

4:45pm - 5:00pm

HOLOCENE LAND USE AND SUSTAINABILITY: INSIGHT FROM THE GRASSLANDS OF ARMENIA

Amy Cromartie[1], Odile Peyron[2], Guillemette Menot[3], Erwan Messager[4], David Etienne[5], Lucas Dugerdil[2,3], Mary Robles[2,6], Kristina Sahakyan[7], Lilit Sahakyan[7], Sebastien Joannin[2]

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Savoie Mont Blanc, INRAE, CARRTEL, France; [6]Univ. Molise, Department Agriculture, Environment and Alimentation, Italy; [7]Institute of Geological Sciences, NAS RA, Armenia; amy.cromartie@gmail.com

This paper investigates Holocene land use and sustainability in the steppes of Armenia. We utilize a variety of different methods (pollen, non-pollen palynomorphs [NPP], the molecular biomarker glycerol dialkyl glycerol tetraethers [GDGTs], macro-charcoal) to untangle the impacts of climate, agro-pastoralist, and fire on this steppe landscape.

Conference Agenda

Session

S5: PALEOPALYNOLOGY ('MODERN ANALOGUES')

Time: **Tuesday, 07/Sept/2021: 9:00am - 10:45am**
Session Chair: **Vincent Lebreton**
Session Chair: **Antonio Picornell**

Presentations

9:00am - 9:40am

POLLEN-BASED QUANTITATIVE RECONSTRUCTION OF PAST PLANT COVER: A STATE-OF-THE-ART REVIEW

Laurent Marquer
University of Innsbruck, Austria; Laurent.Marquer@uibk.ac.at

Pollen-based land cover modelling has been developed over the last decades to correct biases related to pollen production, dispersion and deposition in order to finally assess quantitatively the past land cover changes.

This talk will discuss the pros and cons of the different modelling approaches and highlight the main directions in this field of research.

9:40am - 9:55am

MARINE AND CONTINENTAL PALYNOLOGICAL EVIDENCES FOR THE UNDERSTANDING OF MODERN ENVIRONMENTS IN THE WESTERN MEDITERRANEAN SEA (ALGERIAN MARGIN AND GULF OF LION)

Vincent Coussin[1], Aurélie Penaud[1], Nathalie Combourieu-Nebout[2], Odile Peyron[3], Sabine Schmidt[4], Sébastien Zaragosi[4], Nathalie Babonneau[1]

[1]Laboratoire Géosciences Océans (LGO), UBO, IUEM, UMR 6538; [2]Histoire Naturelle de l'Homme Préhistorique (HNHP), MNHN, CNRS, UMR7194; [3]Institut des Sciences de l'Evolution de Montpellier (ISEM), Université de Montpellier 2, CNRS, UMR 5554; [4]Environnements et Paléoenvironnements Océaniques et Continentaux (EPOC), Université de Bordeaux, CNRS, UMR 5808; vincent.coussin@univ-brest.fr

The Mediterranean Sea is generally described as an oligotrophic area. Samples from the Gulf of Lion and the Algerian Margin have been analysed in order to discuss the productive patterns of these areas using marine and continental microfossil bio-indicators. This marine-continental approach aims to highlight the hydrological and climatic processes leading to the zones productivity.

9:55am - 10:10am

NON-POLLEN PALYNOMORPHS ANALYSES FROM LIGURIAN SOILS PROFILES. PROBLEMS AND PERSPECTIVES.

Bruna Ilde Menozzi, Carlo Alessandro Montanari
Università degli Studi di Genova, Italy; bruna.menozzi@gmail.com

Soil profiles of different locations on the Punta Mesco promontory were sampled and ana-lysed for their pollen, NPP and microcharcoal content. To better interpret the presence of NPPs it is necessary to clarify their taphonomy in these soils. Their distribution will be dis-cussed focusing on "functional groups" attributed according to their taxonomy or their nutri-tional and dispersal strategies.

10:10am - 10:25am

MODERN POLLEN RAIN ON AN ELEVATIONAL GRADIENT IN THE CATALAN PYRENEES

Ramon Pérez-Obiol[1], Marc Sànchez-Morales[1,2], Albert Pèlachs[2], Jordi Nadal[2], Raquel Cunill[2], Anna Badia[2]

[1]Department of Animal Biology, Plant Biology and Ecology, Universitat Autònoma de Barcelona, Spain; [2]Department of Geography, Universitat Autònoma de Barcelona, Spain; ramon.perez@uab.cat

A transect representing diverse communities and environments was carried out in the western Catalan Pyrenees (between 2027 m a.s.l. and 797 m a.s.l.). Sampling was performed on mosses, commonly used as pollen collectors in Pyrenees reference studies of current pollen rain. Geoprocessing tools have been used to compare pollen values from collected samples with the current vegetation layer.

10:25am - 10:40am

THE ASSESSMENT OF POLLEN REPRESENTATION ON MEDITERRANEAN MOUNTAINS

Davide Attolini[1], Francesco Ciani[2], Maria Angela Guido[1], Carlo Montanari[1]

[1]CIR-LASA, Università degli Studi di Genova, Italy; [2]Department of Biology, University of Study of Florence, Italy; davide.attolini@edu.unige.it

In recent decades, an increasing number of researches have been carried out to clarify the relationship between recent pollen deposition and vegetation. Here we test some of these methods, together with statistical analysis, to find the most suitable for the particular environmental conditions of the Mediterranean mountains.

Conference Agenda

Session

S6: AEROPALYNOLOGY (METHODS IN AEROBIOLOGY)

Time: **Tuesday, 07/Sept/2021: 11:00am - 12:00pm**
Session Chair: **Maria P. Plaza**
Session Chair: **Alessandro Travaglini**

Presentations

11:00am - 11:15am

COMPARATIVE BETWEEN FORECAST METHODS IN AEROBIOLOGY

Antonio Picornell, María del Mar Trigo, Rocío Ruiz-Mata, Baltasar Cabezudo, Marta Recio
Department of Botany and Plant Physiology, University of Malaga, Spain; picornell@uma.es

Stepwise multiple linear regressions have been traditionally used on aerobiological studies, but in the last decades new forecast methods, such as random forest and neural nets, have been implemented in aerobiological research. The aim of this study is to compare the performance of these three methods to determine which one produces less errors in the pollen and spore predictions.

11:15am - 11:30am

TOMCAST MODEL AND AEROBIOLOGY AS AN EFFECTIVE GREEN TOOL TO PREDICT INITIAL RISK OF EARLY BLIGHT IN POTATO CROPS. A CASE OF STUDY IN A LIMIA REGION (NW SPAIN)

Laura Meno Fariñas[1], Olga Escuredo Pérez[2], María Carmen Seijo Coello[3]
[1]UNIVERSITY OF VIGO; [2]UNIVERSITY OF VIGO; [3]UNIVERSITY OF VIGO; laura.meno@uvigo.es

Early blight caused by Alternaria species is one of the most common diseases in potato crop. Risk models are useful to predict the risk of infection. This study uses aerobiology to adapt TOMCAST model for control early blight in potato crops in A Limia.

11:30am - 11:45am

METABARCODING AS A TOOL FOR POLLEN IDENTIFICATION: POTENTIALS AND PITFALLS

Stephanie Joyce Swenson, Andreas Kolter, Birgit Gemeinholzer
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Metabarcoding, a technique of using a short variable DNA region to identify the mixed species composition of an environmental sample, has shown great potential as an identification tool for a wide range of taxa. Our work has aimed to evaluate pollen metabarcoding from a wide of array of sources to further elucidated strengths and weaknesses of this technique.

11:45am - 12:00pm

SAMPLING IS NOT SIMPLE: A COMPARATIVE STUDY OF METHODS FOR POLLEN, POLLEN PROTEINS AND AIRBORNE ALLERGENS COLLECTION

Iris Aloisi[1], Chiara Suanno[1], Silvia Sandrini[2], Paola De Nuntiis[2], Stefano Del Duca[1], Delia Fernández-González[2,3]
[1]Università degli Studi di Bologna, Italy; [2]Institute of Atmospheric Sciences and Climate-CNR, Bologna, Italy; [3]Department Biodiversity and Environmental Management, University of León, Spain; iris.aloisi2@unibo.it

Standardised studies comparing airborne pollen, aeroallergen, and meteorological conditions are needed for a comprehensive knowledge of air allergenicity. Airborne proteins, selected allergens, aerosol chemical composition were measured. The sampling was performed with three different collectors running in parallel. Correlation analysis of proteins, allergens, aerosol chemical composition and meteorological parameters highlighted how pollen allergen exposure can be influenced by external factors.

Conference Agenda

Session

S7: PALEOPALYNOLOGY (QUATERNARY CLIMATE AND VEGETATION CHANGES)

Time: **Tuesday, 07/Sept/2021: 2:00pm - 3:30pm**
Session Chair: **Aurélie Penaud**
Session Chair: **Katerina Kouli**

Presentations

2:00pm - 2:15pm

INDIAN VEGETATION AND MONSOON RESPONSE TO MILLENNIAL AND ORBITAL CLIMATE VARIABILITY DURING THE LAST GLACIAL PERIOD

Coralie Zorzi[1,2], Stéphanie Desprat[1,2], Charlotte Clément[2], Dulce Oliviera[3], Philppe Martinez[2]

[1]EPHE, PSL Research University, France; [2]EPOC-Université de Bordeaux, France; [3]CCMAR-Algarve University, Portugal; coraliezorzi@gmail.com

The Indian Summer Monsoon (ISM), bringing up to 80-90% of the annual rainfall in Central India, is highly variable and sensitive to global climate change. We investigated marine sediment samples from the last glacial period (~73-20 ka) with the aim to better constrain the ISM variability in response to abrupt climate changes or changing boundary conditions.

2:15pm - 2:30pm

IMPRINT OF SEASONALITY CHANGES ON FLUVIO-GLACIAL DYNAMICS ACROSS HEINRICH STADIAL 1 (NE ATLANTIC OCEAN)

Wiem Fersi[1], Aurélie Penaud[1], Mélanie Wary[2], Samuel Toucanne[3], Claire Waelbroeck[4], Linda Rossignol[5], Frédérique Eynaud[5]

[1]Univ Brest (UBO), CNRS, UMR 6538 Laboratoire Géosciences Océan (LGO), F-29280 Plouzané, France; [2]Institut de Ciència i Tecnologia Ambientals (ICTA-UAB), Universitat Autònoma de Barcelona, Bellaterra, Catalonia, Spain; [3]Ifremer, Laboratoire Géophysique et environnements Sédimentaires. F-29280 Plouzané, France; [4]LOCEAN/IPSL, Sorbonne Université-CNRS-IRD-MNHN, UMR7159, Paris, France; [5]Univ Bordeaux, CNRS, UMR 5805 Environnements et Paléoenvironnements Océaniques et Continentaux (EPOC), F-33405 Talence, France; Wiem.Fersi@univ-brest.fr

A new dinoflagellate cyst analyses from the northern Bay of Biscay have been carried out at sub-centennial resolution to reconstruct the fluvio-glacial history of 'Fleuve Manche' paleoriver within HS1 interval. We argue that multidecadal change in seasonality played a key role in the hydrological regime of western Europe with episodes of substantial fluvio-glacial delivery concomitant with warm summers.

2:30pm - 2:45pm

NEW IBERIAN MARGIN POLLEN RECORD TO CONSTRAIN THE TERRESTRIAL BIOSPHERE EVOLUTION ACROSS TERMINATION V

Gabriel Hes[1], María F. Sánchez Goñi[2], Nathaelle Bouttes[3], Déborah d'Olier[4]

[1]Université de Bordeaux, UMR CNRS 5805 EPOC, Allée Geoffroy Saint-Hilaire Bât. 18N, 33615 Pessac cedex, France; [2]Ecole Pratique des Hautes Etudes (EPHE), PSL University, Allée Geoffroy Saint-Hilaire Bât. 18N, 33615 Pessac cedex, France; [3]Laboratoire des Sciences du Climat et de l'environnement, LSCE/IPSL, CEA-CNRS-UVSQ-Université Paris Saclay, F91-198, Gif sur Yvette, France; [4]Département de Géosciences, École Normale Supérieure, PSL Université, Paris, France; gabriel.hes@ens.fr

This study proposes a three-step integrated approach, combining observation and modelling results, to unveil the evolution of terrestrial biosphere and its contribution to the carbon cycle during Termination V (TV, ~420 kyr).

2:45pm - 3:00pm

VEGETATION PATTERNS IN THE CORINTH RIFT AREA THROUGH SUCCESSIVE CLIMATIC CYCLES OF QUATERNARY: EVIDENCE FROM THE IODP 381 POLLEN ASSEMBLAGES

Aikaterini Kafetzidou[1], Eugenia Fatourou[1], Konstantinos Panagiotopoulos[2], Fabienne Marret[3], Katerina Kouli[1]

[1]National and Kapodistrian University of Athens, Greece; [2]University of Cologne, Germany; [3]University of Liverpool, UK; akafetzidou@geol.uoa.gr

The results of the palynological analysis of the top 250m of the IODP Exp. 381 record from the Gulf of Corinth (Greece) are presented. The analyses aim to investigate the glacial-interglacial vegetation history in the southernmost Balkan tree refugium, constrain the timing of Quaternary extinctions of relict tree taxa, and distinguish global from local drivers of environmental change.

3:00pm - 3:15pm

KEY CHANGES IN THE BRAZILIAN ATLANTIC FOREST BETWEEN 1.5 AND 1.3 MA - COLÔNIA CRATER, BRAZIL

Paula A. Rodríguez-Zorro[1], Marie-Pierre Ledru[1], Charly Favier[1], Edouard Bard[2], Denise Bicudo[3], Marta Garcia[2], Gisele Marquardt[4], Frauke Rostek[2], André Oliveira Sawakuchi[5], Quentin Simon[2], Kazuyo Tachikawa[2]

[1]ISEM, Univ Montpellier, CNRS, EPHE, IRD, France; [2]CEREGE, Aix Marseille Univ, CNRS, IRD, INRAE, Coll France, Aix-en-Provence, France; [3]Instituto de Botânica, Ecology Department, São Paulo, Brazil; [4]Universidade Guarulhos, São Paulo, Brazil; [5]Institute of Geosciences,University of São Paulo, São Paulo, Brazil; paularsat@gmail.com

A major challenge of testing the responses of tropical diversity richness through climate changes is the scarcity of continuous long sediment records associated to the succession of glacial-interglacial cycles.In addition, understanding the adaptation of tropical ecosystems to such drastic climatic transitions are crucial, since the future of those depends on the ability that they have to adapt to the different stressors over time.

3:15pm - 3:30pm

HOW THE AFRICAN HUMID PERIOD SHAPED ENVIRONMENTAL CHANGES IN NORTHERN MADAGASCAR

Vincent Montade[1], Helena Teixeira[2], Jordi Salmona[3], Julia Metzger[4], Laurent Bremond[1], Thomas Kasper[5], Gerhardt Daut[5], Sylvie Rouland[1], Sandratrinirainy Ranarilalatiana[6], Romule Rakotondravony[7], Lounès Chikhi[8], Hermann Behling[9], Ute Radespiel[2]

[1]Institute of Evolutionary Science of Montpellier, France; [2]Institute of Zoology, Univ of Veterinary Medicine Hannover, Germany; [3]Laboratoire Évolution & Diversité Biologique, Univ of Paul Sabatier, Toulouse, France; [4]Institute of Animal Breeding and Genetics, Univ of Veterinary Medicine Hannover, Hannover, Germany; [5]Friedrich-Schiller-Univ of Jena, Department of Physical Geography, Jena, Germany; [6]Univ of Antananarivo, Laboratoire de Palynologie Appliquée, Antananarivo, Madagascar,; [7]Faculté des Sciences, de Technologies et de l'Environnement, Univ of Mahajanga, Mahajanga Be, Mahajanga, Madagascar; [8]Instituto Gulbenkian de Ciência, Oeiras, Portugal & Laboratoire Évolution & Diversité Biologique, Univ of Paul Sabatier, Toulouse, France; [9]Univ of Goettingen, Department of Palynology and Climate Dynamics, Göttingen, Germany; vincent.montade@umontpellier.fr

Based on a multi-proxy approach applied to a lacustrine sediment record from a crater lake in the Montagne d'Ambre National Park, our study revealed five major climatic periods with distinct environmental dynamics during the past 25,000 years.

Conference Agenda

Session

S8: PALEOPALYNOLOGY (HOLOCENE ENVIRONMENTAL CHANGES)

Time: **Tuesday, 07/Sept/2021: 3:45pm - 5:15pm**
Session Chair: **Alessia Masi**
Session Chair: **Sébastien Joannin**

Presentations

3:45pm - 4:00pm

CONTRASTED CLIMATE PATTERNS DURING THE LATE GLACIAL AND HOLOCENE IN ITALY RECONSTRUCTED FROM POLLEN DATA

Marion Blache[1], Mary Robles[1], Sébastien Joannin[1], Elisabetta Brugiapaglia[2], Guillemette Ménot[3], Lucas Dugerdil[1,3], Anna Maria Mercuri[4], Assunta Florenzano[4], Angèle Jeanty[1], Odile Peyron[1]

[1]Univ. de Montpellier, France; [2]Univ. Molise, Department Agriculture, Environment and Alimentation; [3]Univ. Lyon, ENSL, UCBL, UJM, CNRS, LGL-TPE, F-69007 Lyon, France; [4]Univ. Modène et Reggio Emilia, Department Life Sciences, Labotario di Palinologia e Paleobotanic, Italy; marion.blache@etu.umontpellier.fr

This study propose here to use pollen data to reconstruct quantitatively the climate trends at the Italian scale during the last 15000 years. In order to reconstruct the climate, the Modern Analogue Technique was used to reconstruct the mean annual temperature and the annual precipitations.

4:00pm - 4:15pm

LATE – HOLOCENE ENVIRONMENTAL CHANGES AND HUMAN IMPACT AT LAKE VOLVI (GREECE)

Lucrezia Masci[1], Alessia Masi[1,2]

[1]Sapienza University of Rome, Italy; [2]Max Planck Institute for the Science of Human History, Jena, Germany; lucrezia.masci@uniroma1.it

Macedonia region stands out for its incredible biodiversity both for geological, climatic and human factors. The region is in one of the most ecologically sensitive areas in the Mediterranean and includes river and wetland habitats near the lakes. The region has represented a connection between Asia and Europe for numerous populations since ancient times.

4:15pm - 4:30pm

A STUDY OF INTERACTIONS BETWEEN NORSE FARMERS AND THEIR ENVIRONMENT IN GREENLAND: THE CASE OF THE WESTERN SETTLEMENT

Elia Roulé[1], Camille Picard[2], Damien Rius[2], Emilie Gauthier[2]

[1]University of Bordeaux, FR; [2]Laboratoire Chrono-environnement, UMR 6249/CNRS, University of Franche-Comté, FR; Elia.Roule@gmail.com

At the end of 10th century Norse took advantage of a global warming climate to settle in Greenland, until the middle 15th century. At higher latitude (64°N), the Western Settlement, human activites were constrained by a harsher climate (Arneborg et al., 2012; Schofield et al., 2019). An analysis provides a first glimpse of human-environment interactions (Barlow et al., 1997).

4:30pm - 4:45pm

HOLOCENE VEGETATION AND GRAZING ACTIVITY IN THE ORKHON VALLEY (MONGOLIA)

Chéïma Barhoumi[1], Marcel Bliedtner[2], Paul Strobel[2], Hermann Behling[1]

[1]Albrecht-von-Haller Institute for Plant Sciences, Georg-August-Universität Göttingen, Germany; [2]Friedrich Schiller University of Jena; cheima.barhoumi@gmail.com

We present the first pollen results from a sediment core from the upper Orkhon Valley, which show a transition from a more forested landscape at the start of the Holocene, to a steppic environment (between 5500 and 4500 cal. yr BP). These results could be linked both to climate change and to the intensification of grazing.

4:45pm - 5:00pm

MULTI-PROXY AND MULTI-METHOD MONGOLIAN LATE HOLOCENE CLIMATE AND ENVIRONMENT RECONSTRUCTIONS FROM LAKE AYRAG.

Lucas Dugerdil[1,2], Guillemette Ménot[1], Odile Peyron[2], Isabelle Jouffroy-Bapicot[3], Salomé Ansanay-Alex[1], Ingrid Antheaume[1], Hermann Behling[4], Bazartseren Boldgiv[5], Anne-Lise Develle[6], Grossi Vincent[1], Jérôme Magail[7], Matthew Makou[1], Mary Robles[2], Julia Unkelbach[4], Boris Vannière[3], Sébastien Joannin[2]

[1]Univ. Lyon, ENS de Lyon, Université Lyon 1, CNRS, UMR 5276 LGL-TPE, F-69364, Lyon, France; [2]Université de Montpellier, CNRS, IRD, EPHE, UMR 5554 ISEM, Montpellier, France; [3]Université Bourgogne Franche Comté, CNRS UMR 6249 Laboratoire Chrono-environnement, F-25030, Besançon, France; [4]University of Goettingenn Department of Palynology and Climate Dynamics, Albrecht-von-Haller-Institute for Plant Sciences, Germany; [5]National University of Mongolia, Ecology Group, Department of Biology, School of Arts and Sciences, Ulaanbaatar 14201, Mongolia; [6]Université de Savoie, CNRS UMR 5204 EDYTEM, 73376 Le Bourget-du-Lac, France; [7]Musée d'anthropologie préhistorique de Monaco, 56, boulevard du Jardin exotique, 98000 MC, Monaco; lucas.dugerdil@ens-lyon.fr

A coupled pollen-branched Glycerol Diakyl Glycerol Tetraethers (brGDGT) paleoclimate reconstruction approach has been tested to provide independent and robust estimates of Holocene climate and environment changes in the extremely arid environment of the mountainous areas ranging from northern Arid Central Asia (ACA) to the Mongolian Plateau.

5:00pm - 5:15pm

VEGETATION, CLIMATE AND FIRE HISTORY DURING THE LAST 5000 YR BP IN THE CENTRAL CERRADO, BRAZIL (LAKE FEIA)

Katerine Escobar-Torrez[1], Marie-Pierre Ledru[1], Raquel Franco Cassino[2]

[1]Institut des Sciences de l'´Evolution de Montpellier-Université de Montpellier CNRS IRD EPHE, France; [2]Departamento de Geologia-Universidade Federal de Ouro Preto, Brasil; katerine.escobartorrez@ird.fr

In an attempt to understand differences between natural fire from anthropic fire, and the effect of fire in the central Cerrado vegetation, we are analyzing a sediment core from Lake Feia (LFB1) to reconstruct fire activity and vegetation of the last 5000 years.

Conference Agenda

Session

S9: BRIDGING SESSION BETWEEN MEDPALYNOS AND THE ITALIAN SOCIETY OF BOTANY

Time: **Wednesday, 08/Sept/2021: 9:00am - 10:30am**
Session Chair: **Anna Maria Mercuri**

Presentations

9:00am - 9:20am

OPENING OF THE 116TH SBI CONGRESS - ANNOUNCEMENT OF THE MEDPALYNOS CLOSING CEREMONY

Alessandro Chiarucci[1], Anna Maria Mercuri[2]
[1]Alma Mater Studiorum - University of Bologna, Italy; [2]University of Modena and Reggio Emilia, Italy; annamaria.mercuri@unimore.it

Opening of the joint session 116th SBI Congress - MedPalynoS 2021

9:20am - 10:00am

THE CHALLENGE OF COMBINING HISTORICAL ARCHIVES WITH PALEOENVIRONMENTAL DATA TO CREATE ROBUST EXPLANATIONS OF ENVIRONMENTAL TRANSFORMATION THROUGH TIME (30'+10')

Scott A. Mensing[1], Edward Schoolman[1], Adam Csank[1], Gianluca Piovesan[2]
[1]University of Nevada, Reno Nevada USA, United States of America; [2]University of Tuscia, Viterbo, Italy; smensing@unr.edu

This plenary will review the challenges inherent in implementing interdisciplinary research that combines historical, paleoecologic and paleoclimate data to interpret the impact of society on the environment. We will present a conceptual model for project design and data collection that scales appropriately from local case studies to the regional context. This approach is intended to produce more robust causal explanations.

Conference Agenda

Session

S10: ARCHAEOPALYNOLOGY

Time: **Wednesday, 08/Sept/2021: 10:45am - 12:30pm**
Session Chair: **Assunta Florenzano**
Session Chair: **Sebastián Pérez-Díaz**

Presentations

10:45am - 11:00am

THE LAKE DOJRAN POLLEN SEQUENCE: A BRIDGE BETWEEN SCIENTIFIC AND HUMANISTIC APPROACH TO THE ENVIRONMENTAL HISTORY IN THE BALKANS

Alessia Masi[1,2], Lucrezia Masci[1], Cristiano Vignola[1,2], Adam Izdebski[2]

[1]Department of Environmental Biology, Sapienza University of Rome, Italy; [2]Palaeo-Science and History Group, Max Planck Institute for the Science of Human History, Jena, Germany; alessia.masi@uniroma1.it

The paper reports on the ways in which environmental sciences converges with history as a humanistic discipline that focus on the past. The focus is on the southern Balkans with a comparison between the high-resolution pollen data from Lake Dojran (between Greece and Republic of North Macedonia) and Lake Volvi (continental Greece) records.

11:00am - 11:15am

LANDSCAPE EVOLUTION AND SOCIAL RESILIENCE IN THE BALEARIC ISLANDS SINCE PREHISTORY. THE STUDY-CASE OF SANTA PONÇA (MALLORCA, WESTERN MEDITERRANEAN)

Gabriel Servera-Vives[1,2], Grant Snitker[3,4], Lluís Gómez-Pujol[5], Llorenç Picornell-Gelabert[2], Joan J. Fornós[5], Assunta Florenzano[1], Manuel Calvo[2], Anna Maria Mercuri[1]

[1]Laboratorio di Palinologia e Paleobotanica, Università degli Studi di Modena e Reggio Emilia. Italy.; [2]ArqueoUIB, Departament de Ciències Històriques i Teoria de les Arts, Spain; [3]USDA Forest Service, Southern Research Station, Center for Forest Disturbance Science, Athens, GA, USA; [4]Department of Anthropology, University of Georgia, Athens, GA, USA; [5]Earth Sciences Research Group, Dept. of Biology. University of the Balearic Islands; gservera@unimore.it

The EU-funded OLEA-project (G.A.-895735) aims to focus on the drivers and timing of the spread of Olea macchia as a central feature of the current Balearic mosaic landscape. This work will advance research on mosaic landscape formation in the Mediterranean in relation to human, climate, and environmental drivers.

11:15am - 11:30am

PALYNOLOGICAL RECONSTRUCTION OF LATE HOLOCENE PALAEOENVIRONMENTAL EVOLUTION IN CORSICAN COASTAL WETLANDS

Jordi Revelles[1,2], Matthieu Ghilardi[3]

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This study is focused on the potential of palynology for the reconstruction of palaeoenvironmental evolution of coastal wetlands of Corsica during the Late Holocene. The identification of aquatic organisms such as macrophytes, freshwater algae and cyanobacteria informs about limnological conditions, salinity and trophism of waters; and other microremains inform about soil erosion episodes and animal frequentation of coastal wetlands.

11:30am - 11:45am

LONG-TERM ENVIRONMENTAL CHANGES IN THE CENTRAL PO PLAIN: INFERENCES FROM PALYNOLOGICAL ANALYSIS ON THREE TERRESTRIAL CORES

Eleonora Clò

Università degli Studi di Modena e Reggio Emilia, Italy; eleonora.clo@unimore.it

This contribution presents a pollen-based reconstruction of flora and vegetation characterizing the central Po Plain for at least the last 15,000 years. Pollen samples were collected from three terrestrial cores drilled at different distances N from the Terramara S. Rosa di Poviglio, as part of the SUCCESSO-TERRA Project (PRIN-20158KBLNB).

11:45am - 12:00pm

LANDSCAPES AND LAND USE OF THE SARNO RIVER PLAIN (CAMPANIA ITALY) OVER THE LAST 5000 YEARS

Chiara Comegna[1,2], Halinka Di Lorenzo[2], Paola Petrosino[2], Nicoletta Santangelo[2], Antonio Santo[3], Elda Russo Ermolli[2]

[1]DICEM, Università degli Studi della Basilicata; [2]DISTAR, Università di Napoli Federico II; [3]DICEA, Università di Napoli Federico II; chiara.comegna@unibas.it

Pollen analysis was carried on the infilling succession of the Fossa San Vito sinkhole. In the bottom part of the core, the high forest cover suggests the presence of a closed environment where a few signs of human activities are recorded. From the Greek-Roman age, anthropogenic indicators increase indicating the exploitation of the area for grazing and crops activities.

12:00pm - 12:15pm

THE VEGETATION RECONSTRUCTION OF THE POMPEII AREA BETWEEN THE 1ST MILLENNIUM BC AND AD 79

Cristiano Vignola[1], Jacopo Bonetto[2], Guido Furlan[2], Michele Mazza[3], Cristiano Nicosia[2], Elda Russo Ermolli[4], Laura Sadori[1]

[1]Dipartimento di Biologia Ambientale, Università degli Studi di Roma "La Sapienza", Rome (Italy); [2]Dipartimento dei Beni Culturali, Università di Padova, Padua (Italy); [3]Rome (Italy); [4]Dipartimento di Scienze della Terra, dell'Ambiente e delle Risorse, Università di Napoli "Federico II", Naples (Italy); cristiano.vignola@uniroma1.it

The AD 79 eruption of the Vesuvius severely affected the Sarno River floodplain in the surrounding of Pompeii. The landscape was covered with volcanic materials that destroyed the ecosystem but, at the same time, preserved the traces of former environmental conditions (Vogel and Märker 2010). The palaeoenvironmental reconstruction of the floodplain and its evolution in relation to the past urbanization

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12:15pm - 12:30pm

A PALAEOECOLOGICAL RECORD OF LAND-USE CHANGES IN SE SICILY DURING THE LAST 400 YEARS

Fabrizio Michelangeli[1], Federico Di Rita[1], Fabrizio Lirer[2], Donatella Magri[1]

[1]Department of Environmental Biology, Sapienza University of Rome, Piazzale Aldo Moro 5, Rome, Italy; [2]Istituto di Scienze Marine (ISMAR)-CNR, Napoli, Calata Porta di Massa, Interno Porto di Napoli, 80133, Napoli, Italy; fabrizio.michelangeli@uniroma1.it

A new marine pollen record from SE Sicily provides a detailed reconstruction of vegetational changes in relation to past socio-economic dynamics, land use changes, and historical land management policies over the last 400 years in Sicily. The high time resolution of our analysis allowed us to interpret nature and extent of human impact from the holistic perspective of historical ecology.

Conference Agenda

Session

P1: POSTER SESSION 1

Time: **Monday, 06/Sept/2021: 12:15pm - 1:00pm**
Session Chair: **Gabriel Servera-Vives**
Session Chair: **Eleonora Clò**

Presentations

STATUS AND TREND OF THE MAIN ALLERGENIC POLLENS IN THE CITY OF ROME ITALY (2003-2019)

Alessandro Di Menno di Bucchianico[1], Raffaela Gaddi[1], Maria Antonia Brighetti[2], Denise De Franco[2], Annarosa Miraglia[2], Alessandro Travaglini[2]

[1]ISPRA, Italian National Institute for Environmental Protection and Research, Italy; [2]Department of Biology, University of Rome Tor Vergata, Italy; alessandro.dimenno@isprambiente.it

This work describes the 2019 status of the presence of the main allergenic pollen familes (Betulaceae, Asteraceae, Corylaceae, Cupressaceae/Taxaceae, Poaceae, Oleaceae, Urticaceae) and the Alternaria spore in the city of Rome, Italy and their air concentration trends, measured, from 2003 to 2019, by the Aerobiological Monitoring Center of Tor Vergata (Rome).

ASSESSING THE ALLERGENIC POTENTIAL OF THE URBAN PARKS OF FLORENCE (ITALY)

Francesco Ciani, Bruno Foggi, Marta Mariotti Lippi
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The study aims to quantify the allergenic potential of several public parks of Florence (Italy) using the Urban Green Zone Allergenicity Index.

The results highlighted that the index is a useful tool that provides useful information for the current state of urban green management and future planning.

PHENOLOGICAL MONITORING OF CUPRESSUS SEMPERVIRENS L. COMPARISON BETWEEN URBAN AND EXTRA-URBAN AREA

Annarosa Miraglia, Maria Antonia Brighetti, Denise De Franco, Francesca Quagliero, Alessandro Travaglini
Università degli Studi di Roma Tor Vergata, Italy; annarosa.miraglia@gmail.com

Cupressaceae pollen is the main cause of "winter pollinosis". The purpose of the study is to compare the trend of phenophases in urban and extra-urban areas in order to predict beginning, end and severity of the cypress pollen season at a local level, based on weather conditions.

THE DIMORPHISM OF VITIS POLLEN: A DIFFERENT PALYNOLOGICAL IMPRINT OF WILD AND DOMESTICATED V. VINIFERA L.

Anna Maria Mercuri[1], Paola Torri[1], Assunta Florenzano[1], Eleonora Clò[1], Marta Mariotti Lippi[2], Elisabetta Sgarbi[3], Cristina Bignami[3]

[1]Dipartimento Scienze della Vita, Università di Modena e Reggio Emilia, Modena, Italy; [2]Dipartimento di Biologia, Università degli Studi di Firenze, Firenze, Italy; [3]Dipartimento Scienze della Vita, Università di Modena e Reggio Emilia, Reggio Emilia, Italy; annamaria.mercuri@unimore.it

The dimorphism of Vitis pollen is a well-known feature in agrarian studies and a practically ignored characteristic in the archaeobotanical/ palaeoenvironmental field of research.

Trizonocolporate and inaperturate pollen grains are common in the wild subspecies of Vitis but can occur in some ancient cultivars of the subspecies vinifera.

PALYNOLOGICAL FLORA OF THE COASTAL HABITATS IN DHOFAR (SULTANATE OF OMAN)

Lia Pignotti, Cristina Bellini, Francesco Ciani, Carlotta Bambi, Asia Bonciani, Laura Tagliapietra, Irene Viviani, Tiziana Gonnelli, Marta Mariotti Lippi
Università di Firenze, Italy; marta.mariotti@unifi.it

We present the results of field surveys in the coastal habitats of Dhofar (Sultanate of Oman) and a contribution to the palynological flora of the region

EVOLUTION OF THE DIVERSITY OF THE TYPE OF POLLEN FORAGED BY BEES IN RELATION TO THE VEGETAL COMPOSITION OF THE ENVIRONMENT AND THE STAGE OF COLLECTION

Amelia-Virginia González-Porto[1], José-Antonio Molina-Abril[2], Cristina Pardo-Martin[2]

[1]Centro de Investigación Apícola y Agroambiental de Marchamalo-IRIAF, Spain; [2]Facultad de Biología de la Universidad Complutense de Madrid; avgonzalezp@jccm.es

The study has the aim of showing the importance of recognizing the vegetation around the hives to deduce the main sources of protein feeding of the bee colonies throughout a year of activity.

AEROBIOLOGY AND POTATO CULTIVARS AS AN EFFECTIVE TOOL TO REDUCE THE INCIDENCE OF LATE BLIGHT AND AVOID YIELD LOSSES

Laura Meno, Olga Escuredo, Maria Shantal Rodríguez-Flores, Maria Carmen Seijo Coello
Department of Vegetal Biology and Soil Sciences, Facultade de Ciencias, Universidade de Vigo; oescuredo@uvigo.es

Sporangia of P. infestans are detected in the air of potato crops all seasons but only under favorable climatic conditions produce late blight. This work study in the field the conditions to favor disease development and the susceptibility of different potato cultivars.

Conference Agenda

Session

P2: POSTER SESSION 2

Time: **Tuesday, 07/Sept/2021: 12:00pm - 1:00pm**
Session Chair: **Gabriel Servera-Vives**
Session Chair: **Eleonora Clò**

Presentations

AEROBIOLOGICAL DATA TO INTERPRET THE TERRITORY

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The aerobiological network of Castilla Y Leon consists of 13 pollem traps. The aim of this study is to know the representativeness of each trap into the network. The clustering was made with the most abundant pollen types in the region. The results showed that the network can be divided into two groups that represent the two geographic areas in the region

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THREE SAMPLERS IN ROME: A YEAR COMPARED

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The Rome city is characterized by significant environmental heterogeneity. The analysis of pollen presence is a useful instrument: the pollen data are those recorded at the aerobiological stations of Tor Vergata Monitoring Center Rome. One year of data (2020) of three monitoring samplers in Rome was considered: Villa S.Pietro Hospital – Rome North, University Tor Vergata – Rome South, Cipro – Rome Center.

AEROBIOLOGICAL STUDY OF THE ATMOSPHERE OF BRAGANÇA (NE PORTUGAL): PRELIMINARY RESULTS

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Preliminary results of the first year of study of the pollen and fungal spores present in the atmosphere of Bragança, Portugal, and the influence of weather variables on their airborne concentrations.

PRELIMINARY PALYNOLOGICAL ANALYSIS OF THE LATE NEOLITHIC AND COPPER AGE SITE OF COLOMBARE DI VILLA (NEGRAR DI VALPOLICELLA, VERONA, ITALY)

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The interdisciplinary research project of Colombare di Villa started in 2019 from the excavation made by Francesco Zorzi in the 50s, and included palynology to contribute to the palaeoenvironmental and economic reconstruction of people that settled in the N Italy site from late Neolithic to the beginning of early Bronze Age.

RIVULARIA HETEROCYSTIS AS INDICATOR OF LONG-TERM CHANGES OF MOISTURE AND NUTRIENTS IN SOILS: A QUALI-QUANTITATIVE STUDY AT THE TERRAMARA S.ROSA DI POVIGLIO (REGGIO EMILIA, ITALY)

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This work is part of the constantly updated research on non-pollen palynomorphs (NPP). The study was focused on the identification of Rivularia, a cyanobacterium that is an excellent bioindicator as it requires certain trophic, climatic and environmental conditions at different stages of the life cycle (Whitton and Mateo 2012).

ENVIRONMENTAL AND LAND USE CHANGES IN A MEDITERRANEAN LANDSCAPE: THE CASE STUDY OF THE ANCIENT METAPONTUM (PANTANELLO, S ITALY)

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The paper presents the results of palynological and geoarchaeological investigation carried out on the Greek-Roman site of Pantanello (Metapontum, S Italy). The combined bio-geoarchaeological approach provides information for palaeoenvironmental and economical reconstructions of the ancient Metapontum area, suggesting that human impact have locally prevailed over climate influence on environmental changes.

A PALYNOLOGICAL APPROACH TO THE RECONSTRUCTION OF MEDIEVAL LANDSCAPE IN TUSCANY, CENTRAL ITALY (NEU-MED PROJECT)

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Part of the nEU-Med project, these palynological analyses on cores taken from Tuscany aim to help the reconstruction of the landscape and land use to better understand the processes of economic growth that took place between the 7th and 12th centuries AD.

THE TOLEDO MOUNTAINS (CENTRAL SPAIN) EXCITING SECONDARY CHARACTER

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The Toledo Mountains is a mid-elevation range complex placed between the Tagus and Guadiana basins, in the centre of the Iberian Peninsula. Eight mires along the mountain complex have been studied through pollen analysis, fire history reconstruction, loss on ignition, geochemistry and magnetic susceptibility, in order to disentangle the Toledo Mountains vegetation history from Late Neolithic until today.

VEGETAL ANTHROPOGENIC DYNAMICS FROM THE HOLOCENE TO THE ANTHROPOCENE ON THE CANTABRIAN COAST (NORTHERN IBERIA).

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This study presents the results of two cores from the Saja-Besaya estuary (Cantabria) dated between the Holocene and the Anthropocene.

The human impact is initially reduced to livestock activities. Natural changes in the vegetation are observed during the Holocene, although soon followed by agricultural activity. Eventually, the impact of timber harvesting and replanting is present in the pollen record of the area.

LATE HOLOCENE PALEOECOLOGICAL CHANGES IN THE ECUADORIAN PARAMOS

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Páramo is a neotropical grassland ecosystem that is widespread in the northern Andes. We analysed the pollen and charcoal record of Papallacta since 5000 years. We found one major ecological change at 2500 cal yr BP in the vegetation and fire records, more specifically frequent fires and high Poaceae frequencies are related to low monsoon activity and low ENSO variability.