



BOOK OF ABSTRACTS



ECE 2023
CRETE
European Congress of Entomology

XII European Congress of Entomology

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Crete, Greece

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ΤΕΧΝΙΚΟ ΕΠΙΜΕΛΗΤΗΡΙΟ
ΚΡΗΤΗΣ

Welcome Letter



Dear Colleagues,

On behalf of the Organizing Committee of the ECE 2023 and the Hellenic Entomological Society, we are delighted to welcome entomologists from around the globe to the XII European Congress of Entomology (ECE 2023), in Heraklion, Crete, on 16-20 October 2023.

Forty-five years after the first European Congress of Entomology in 1978 at Reading University, UK and following a series of successful congresses around Europe, we now have the great honor to host this major European entomological meeting in our beautiful country and with it the opportunity to share knowledge, expertise and perspectives.



The world of entomology faces many problems with the increasing threat of climate change, damaging vector-borne diseases, biodiversity loss and the need to feed an expanding world population. Our goal is to gather scientists from around the globe and provide a unique opportunity to exchange information and to communicate research results on a wide range of topics. The ECE 2023 audience consists of researchers and academics from a diverse range of entomology related fields, as well as policy-makers, field agronomists, crop protection experts, medical practitioners, engineers, social scientists and artists.

The congress program includes invited lectures from international experts, symposia, oral and poster sessions, workshops and satellite seminars. In addition, the congress is undoubtedly the ideal meeting place to network and interact, establishing the starting point for future collaborations and breakthrough innovations in entomology.

The historic, as well as magnificent island of Crete sets the ideal scenery for ECE 2023. The congress is hosted in the Cultural and Conference Center of Heraklion, a contemporary venue of international standards, offering high level services in an inspiring environment.

We strongly believe that we will deliver a high-quality meeting which will turn out to be a memorable experience. The success of the congress depends on the contributions of the delegates and we thank you for being actively involved.

Welcome at ECE Congress in Heraklion in 2023!

On behalf of the Organizing Committee

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P001. Characterization of a new island radiation on endemic *Convolvulus floridus* (Convolvulaceae) in the Canary Islands

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The Canary Islands are considered a biodiversity hotspot and have been the subject of numerous evolutionary studies of endemic arthropod taxa. Here, we investigate the newly discovered island radiation of the endemic genus *Percyella* (Psylloidea: Triozidae) in the Canary Islands, using haplotype analyses and Bayesian dating of mitochondrial cytochrome oxidase I. The genus *Percyella* includes four species, all of which are single-island endemics feeding on the same host species *Convolvulus floridus*: *Percyella canari* on Gran Canaria, *P. guanche* on Tenerife, *P. benahorita* on La Palma and *P. gomerita* on La Gomera. Although modest in species diversity, this radiation is atypical in diversification on a single host plant species, but typical in the primary influence of allopatry in driving the diversification process. Our analyses support monophyly of *Percyella* and hence a single colonization event in the archipelago. The age calibrated Bayesian analysis show that the two taxa on Tenerife and La Palma are older than the taxa on La Gomera and Gran Canaria, and the colonizer of La Gomera most likely originated from La Palma and that of Gran Canaria from Tenerife. Our data also suggests that the structure and extent of diversification within each species is less a product of maximum island age, but more likely influenced by recent periods of volcanism and the topology of individual islands.

Keywords: Canary Islands, molecular dating, *Percyella*, *Convolvulus floridus*, radiation

P002. Experimentally induced host-shift changes morphology and fluctuating asymmetry in sex-specific manner in a seed beetle: an experimental evolution approach

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Host-shift induced stress in phytophagous insects could have effect on developmental destabilization. Indicator of developmental instability is fluctuating asymmetry (FA)- small random deviations between right and left side of bilateral symmetrical traits. In theory, symmetry is subject to sexual selection in insects, since FA is considered as an indicator of male quality. Response to environmental variation is commonly sex-specific and can affect patterns of sexual dimorphism. We performed reciprocal transplant experiment

in eight replicated seed beetle (*Acanthoscelides obtectus*) populations adapted to bean and chickpea. Within the framework of experimental evolution and using the method of geometric morphometrics we: 1. observed the effects of long and short term host-shift on patterns of shape variation of beetles of both sexes and 2. tested hypothesis that both sexes will have a higher level of FA after long or short term change from optimal to suboptimal host. We found that long term host-shift process affected shape in a way that bean adapted beetles had wider and shorter abdomen compared to chickpea adapted ones. Short-term effects are more notable in bean selected beetles, especially in the abdominal region. Bean adapted males had the most canalized development, i.e. the lowest level of FA, compared to chickpea beetles. In chickpea adapted females, difference in level of FA significantly decreased after the short term host-shift. Our work indicates that host-shift process can change morphological aspects of beetles in a sex-specific manner and consequently influence their developmental trajectories.

Keywords: host-shift, *Acanthoscelides obtectus*, geometric morphometrics, fluctuating asymmetry, developmental instability

P003. A new species, a new invader, or an old neighbour? The curious tale of the aphid *Longicaudinus corydalisicola* (Tao, 1963)

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Determining the geographical origin of species is usually a difficult matter. Talking about aphids, there are many cases in which species have been described when found outside their original distribution areas. At present, citizen science helps finding and monitoring them, while molecular analysis aid with their identification. However, this kind of studies still has a long way to go. In this work, we present a clear example of these difficulties. Thanks to citizen science, an aphid species, which initially could not be identified based on its morphological characteristics, has been located on species of *Fumaria* in the Iberian Peninsula. Subsequently, it has been found in native spontaneous cover crops in citrus orchards in Valencia and in other natural areas of Spain. The analysis of the molecular sequence of the cytochrome oxidase I gene (COI) highlighted a high coincidence with a species native to Southeast Asia, *Longicaudinus corydalisicola* (Tao, 1962), but sometimes the COI is not enough. We try to confirm the molecular identification with morphological analyses. At the moment we have found this species in several localities of the Iberian Peninsula (León in the Northwest, Valencia in the East, and Cadiz in the South) on species of *Fumaria* (*F. agraria*, *F. capreolata*, *F. officinalis*). We made a complete description of the species and illustrated it conveniently. Its status, its possible origin and its presence in Europe, an area apparently very far from its known distribution area to date (South Korea, Taiwan, China and Japan), are discussed.