

might lead to isolated populations among freshwater organisms. In Namibia a completely isolated population of *Trithemis stictica* can be found in the Naukluft-Mountains. The distance between two most proximate populations of *T. stictica* is more than 900 km. How can a small isolated population of *T. stictica* survive in the middle of the desert? Why shows *T. stictica* such a special occurrence range which differs clearly from other *Trithemis* species? We want to determine if potential exist for forming of a new species in the isolated population in the Naukluft-Mountains.

A pilot study took place in 2014 in two areas: a) an isolated population, Naukluft-Mountain, Namibia and b) a large population, South Africa. The following methods were used: 1) Estimation of the population size and the dispersal behavior; 2) measurement of several morphological parameters; 3) observation of the males' territorial behavior and 4) investigation of several egg and larval parameters.

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#### Section 02 P 03

##### **First record of *Pentacyphona* in the Palaeartic area with description of a new species, Diptera, Pediciidae**

L.P. Kolcsar & L. Keresztes

Based on recent morphological and molecular revisions Pediciidae are considered as one of the most primitive dipterans of the large group of tipulomorphans. The *Tricyphona* genera are worldwide distributed, except Antarctica. From the 4 subgenera, *Pentacyphona* were considered to be exclusively Nearctic, from which 12 species were identified long western (Rocky Mountains) and eastern coast (Appalachian Mountains) of Northern America. In the case four American taxa the wing reduction is a general feature which suggests a highly stenotopic habit of the species. During 2014 a large dipteran belong to Pediciidae was identified in the Southern Carpathians, Central Europe, which was identified belonging to *Pentacyphona* based on genital structures. This is the first record of *Pentacyphona* in the Palaeartic Region. The Carpathian *Pentacyphona* differs from their American kin by gross morphological differences, mostly on the presence of a large apical lobe on the gonocoxite. Here we present the first illustration of the Palaeartic *Pentacyphona*, with comment on its identity and habitat requirements. This research was supported by a grant of the Ministry of National Education,

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#### Section 02 P 04

##### **Life-history strategies of two endemics and one widespread species of the genus *Annitella* Klapálek, 1907 (Trichoptera; Limnephilidae)**

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Life history strategies (growth patterns, voltinism, and developmental time) are essential to understand species adaptation to the environment. Despite they have a strong phylogenetic component some of them may be influenced by different biotic or abiotic factors. Thus the constraints imposed by the habitat characteristics influence the ecological traits of the species living on it. *Annitella* is a Palaeartic genus that comprises several endemic species from different mountain ranges, and only one, *A. obscurata*, widely distributed in different European mountain systems. The aim of this study is to describe and compare the unknown life cycle of *A. obscurata* in Norway, and of two endemic species from the southeast of the Iberian Peninsula, *A. esparaguera* and *A. iglesiasi*. Since related species or populations under the same environmental conditions present similar life history, it is expected similarities between high Spanish altitudinal sites (in the Sierra Nevada) and high latitudinal localities in Norway. After analyzing the population structure of the three species, all had a univoltine life cycle. In Spanish sites located at an altitude below 1800 m, adults are autumn-emerging, as is general for all the species of the genus. However, in Norwegian sites and those located at higher altitude in the Sierra Nevada, emergence anticipates to late summer.

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#### Section 02 P 05

##### **Molecular taxonomy can help to detect, describe and discriminate between larvae of *Tipula balcanica* species group (Diptera, Tipulidae)**

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Larvae identifications in a series of insect groups opens new perspectives since molecular methods are presently largely available and easy to apply. The *Acutipula* larvae, belonging to the dipteran family Tipulidae, are frequently

present in wet and humid environment. In continental Europe there were identified a number of 8 widely distributed species, from which only 5 larvae were identified and described. The further, *A. balcanica*, *A. latifurca* and *A. bosnica* remain, unknown. We applied molecular taxonomy methods using standard DNA barcoding sequences to associate unknown larvae to previously identified adults. When sequence similarity were 99–100% we then checked larvae for morphologically informative characters, such the chaetotaxy on the body segments, the spiracular rings, anal lobes and the head capsule morphology. Here we present and illustrate for the first time the hitherto unknown *A. bosnica*, *A. latifurca* and *A. balcanica* larvae with comments on their identity and distribution. This research was supported by a grant of the Ministry of National Education, CNCS - UEFISCDI, project number PN-II-ID-2012-4-0595.

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## Section 04: Biodiversity, Trophic Interactions and Global Change

Section 04 P 01

### Impact of environmental factors on the distribution of wild bee species across different spatial scales in Europe

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There are many potential drivers of current bee species declines affecting pollination services. Environmental factors like climate change, habitat loss, fragmentation and agricultural intensification are considered to be most important. However, due to lack of data scale-dependency of environmental factors on wild bee distribution has not been examined in detail yet. The general assumption is that climate conditions have a larger impact on wild bee species distribution at large scales, while land cover types and soil variables have more impact at fine scales. Bee distribution data were available from the EU projects STEP (2010-15) and GREENVEINS (2001-05). We investigated the influence of climate, land cover and soil conditions on the distribution of wild bee species across different spatial scales in Europe. Results indicate that habitat types have a high impact at the local scale, while at the continental scale all examined environmental factors highly affect the distribution of wild bee species.

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Section 04 P 02

### Eignung der extrafloralen Nektarien der Ackerbohne als Nahrungsquelle für den Parasitoiden *Ascogaster quadridentata* (Hymenoptera, Braconidae)

A. Herz & S. Wallach

Die Brackwespe *Ascogaster quadridentata* ist ein weit verbreiteter Parasitoid bei verschiedenen Wicklerarten der Gattung *Cydia*. Die Weibchen parasitieren die Eier des Wirtes, die Parasitoidenlarven entwickeln sich anschließend endoparasitisch in den Wirtslarven. Adulte Brackwespen ernähren sich von Nektarquellen und sind daher auf deren Vorhandensein im Agrarökosystem angewiesen. Die Ackerbohne (*Vicia faba* L.) ist eine Nutzpflanze, deren Anbau zur Nahrungs- oder Futtergewinnung oder auch zur Bodenverbesserung zunehmend an Bedeutung gewinnt. Ackerbohnen verfügen bereits noch vor der Blüte über extraflorale Nektarien (EFN), die von verschiedenen Insekten aufgesucht werden. Ziel der Untersuchung war zu prüfen, inwieweit auch *A. quadridentata* diese Nektarquelle nutzen kann. Untersucht wurde

