

**Combining behavioral ecology with community ecology and faunistics of ants
– the second Central European Workshop of Myrmecology,
17 - 19 May 2007, Szeged, Hungary**

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Abstract

A report is given on the second Central European Workshop of Myrmecology held in Szeged and organized by the University of Szeged and by the Hungarian Academy of Sciences. The scientific programme is highlighted and the excursion to the Kiskunság National Park is summarized.

Key words: Central European Workshop of Myrmecology, Szeged, programme.

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What is so good about small meetings and workshops? Is it that they are organized around very specific topics, or that they, sometimes, address only the scientific community of a specific region? Both imply the gathering of only a bunch of specialists. Personally I think this is the major asset of workshops: one can get acquainted with almost everyone and discuss freely, without feeling constrained by established boundaries between research teams, which frequently characterizes big international events.

It was Jan Frouz who first had the idea of organizing a Workshop on Myrmecology for Central European specialists, and he succeeded in gathering ant people from Germany to Romania in České Budějovice, Czech Republic, in the spring of 2005. The success of this initiative also was due to the region's lack of meetings of this type, meetings that are well established in other regions, such as the regular regional IUSI meetings of the English or German Speaking Sections. There was no intention to organize a sequel just in order to establish a "tradition", but, in fact, a second CEWM appeared just natural and it quickly gathered momentum attracting even more interest than the first one: contributing myrmecologists from the UK to Russia and from Turkey to Poland considerably enlarged the boundaries of "Central Europe". Although there is no official philosophy for the CEWM (should there be any?) it is evident that the workshop offers a realistic cross-section of current myrmecology in the region: faunistics and taxonomy alongside community ecology and behavioral ecology. This unique combination is a big plus of the CEWM as in the past decades classical faunistic and even classical organism-centered ecological studies became less and less frequent on international conferences. Let me call it doubtful, though, that without proper taxonomic / faunistic knowledge serious advance in myrmecology will be possible on the long run.

The second CEWM was organized in Szeged by the Department of Ecology of the University of Szeged and by

the Committee for Ecology and Conservation, Szeged Section of the Hungarian Academy of Sciences. Venue was in the building of the local section of the Hungarian Academy of Sciences.

Altogether 55 ant people participated in the Workshop contributing a total of 29 oral and 25 poster presentations. Strong teams came from Sheffield, UK (Stephen Martin, Edward Jenner & al.), Regensburg, Germany (Jürgen Heinze & al.) and Novosibirsk, Russia (Zhanna Reznikova & al.) working mostly on behavioral ecology; from České Budějovice (Jan Frouz & al.) studying mostly soil ecology aspects and from Szeged (led by László Gallé) dealing with community ecology topics. Affiliated with these teams many other scientists and students came from Poland, Slovakia, Czech Republic, Hungary, Slovenia, Croatia, Romania and Turkey. The oral presentations were organized in four sections: "Sociobiology of ants" and "Ants as ecosystem engineers" on the first day (17 May), and "Community ecology and fauna" and "Ants and other organisms" on the second day (18 May). Any "ant gourmet" could find something interesting in these sections. All those interested in behavioral ecology could learn about the evolution and importance of species-specific cuticular hydrocarbon patterns in *Formica* ants (Martin & al.), or about the importance of no-entry signals (Robinson & al.) and the transmission of simplified information (Reznikova & al.) during foraging, but the details of reproductive tactics in *Cardiocondyla* males (Heinze & al.) and other ants were also topics that one should not miss. Ecosystem engineering insights in the interaction between ants and soil, heat management and ant-effect on spruce growth were given by the České Budějovice team. Assembly rules were discussed in the community ecology section regarding the structure of ant-communities on grasslands (e.g., Fokuhl & al., Dahms & al.), abandoned agricultural areas (e.g., Németh & al.), in spruce forests (Véle & al.), or in *Liometopum microcephalum* dominated

Programme of the second Central European Workshop of Myrmecology.

Oral and poster presentations marked with "Abstract" are abstracted in this volume of Myrmecological News.

17 May 2007 (Thursday)

9.00-11.00: Registration.

Section 1 – Sociobiology of ants I. Chair: Jürgen Heinze

- 11.00-11.20: Duncan E. Jackson & Nicolas Châline: Modulation of pheromone trail strength with food quality in Pharaoh's ant, *Monomorium pharaonis*.
- 11.20-11.40: Edward Jenner: Nest site choice by Pharaoh's ants.
- 11.40-12.00: Stephen Martin, Heikki Helanterä & Falko Drijfhout: Evolution of species-specific cuticular hydrocarbon patterns in the *Formica* ants.
- 12.00-12.20: Boris Ryabko & Zhanna Reznikova: Ants and bits. **Abstract**
- 12.20-12.40: Elva Robinson, Duncan E. Jackson, Mike Holcombe & Francis L.W. Ratnieks: No entry signal in ant foraging: new insights from an agent-based model. **Abstract**
- 12.40-14.00: Lunch.

Section 2 – Sociobiology of ants II. Chair: Bálint Markó

- 14.00-14.20: Jürgen Heinze, Andreas Trindl, Bernhardt Seifert & Katsusuke Yamauchi: The evolution of reproductive tactics in *Cardicondyla* males.
- 14.20-14.40: Elisabeth Brunner, & Jürgen Heinze: Hierarchy maintenance in the ant *Temnothorax unifasciatus*.
- 14.40-15.00: Beatrix Ferencz, Bálint Markó, Zsolt Péntes, Botond Sipos & Octavian Popescu: Friend or foe, kin or stranger? Behavioural and molecular aspects of the neighbourhood structure of a *Formica cinerea* MAYR population.
- 15.00-15.20: Angelika Oppelt & Jürgen Heinze: Sperm transfer in the ant *Leptothorax gredleri*.
- 15.20-16.00: Break.

Section 3 – Ants as ecosystem engineers. Chair: Michał Woyciechowski

- 16.00-16.20: Jan Frouz & Radek John: Heat clustering of wood ants *Formica polyctena* during spring heating of the nest.
- 16.20-16.40: Joanna Pętał, Krzysztof Chmielewski & Alina Kusińska: The influence of ants on microflora and chemical properties of fen soils. [Presentation not held.]
- 16.40-17.00: Jan Frouz, Michal Rybníček, Jiří Kalčík & Pavel Cudlin: The effect of *Formica polyctena* on soil chemistry and growth of spruce trees.
- 17.00-18.00: Poster session.
- 19.00: Dinner (Pick Club, Szeged).

18 May 2007 (Friday)

Section 4 – Community ecology and fauna I. Chair: Zhanna Reznikova

- 9.00-9.20: Gerriet Fokuhl, Petr Karlik, Jürgen Heinze & Peter Poschlod: Ant communities on calcareous grasslands in the Franconian Jura (Germany).
- 9.20-9.40: Enikő Németh, Bálint Markó, Eszter Ruprecht & László Gallé: Succession of ant communities on old fields. **Abstract**
- 9.40-10.00: Lenka Petráková & Jiří Schlaghamerský: Preliminary results on the interaction of *Liometopum microcephalum* with other ants. **Abstract**
- 10.00-10.20: Adam Véle, Jaroslav Holuša & Jan Frouz: The occurrence of ants in the spruce managed forests.
- 10.20-10.40: Nihat Aktaç & Kadri Kiran: Faunal composition of Turkish ants. [Presentation not held.]
- 10.40-11.00: Break.



Fig. 1: Workshop participants in front of the cathedral in Szeged.

Section 5 – Community ecology and fauna II. Chair: Joanna Pętal

- 11.00-11.20: László Gallé, Henrietta Mészáros, Gréta Zoványi, Hajnalka Györi-Dürgö, Bálint Markó & Klára Kiss: Monitoring ant communities: Middle-European experiences. [Abstract](#)
- 11.20-11.40: Henriette Dahms, Volkmar Wolters & Jens Dauber: Ants in restored seminatural grasslands in Sweden: species richness and community composition. [Abstract](#)
- 11.40-12.00: Milan Janda: Ecology of New Guinea ants – exploring the unknown fauna. [Abstract](#)
- 12.00-12.20: Michał Woyciechowski: *Myrmica* ants in North Mongolia.
- 12.20-12.40: Zhanna Reznikova: Interspecies hierarchy and social control in ants' communities. [Abstract](#)
- 12.40-13.00: Manfred Verhaagh & Christiana Klingenberg: Digital imaging – bringing the ant types in German collections to myrmecologists' office.
- 13.00-14.30: Lunch.

Section 6 – Sociobiology of ants III. Chair: Jan Frouz

- 14.30-14.50: Tatyana Putyatina: Preference of the foraging strategy as a mechanism of coexistence of *Myrmica* ants (Hymenoptera, Formicidae).
- 14.50-15.10: Sándor Csősz: Nematode induced caste differentiation: evidence for the origin of Nematode-infested *Myrmica* individuals (Hymenoptera: Formicidae).
- 15.10-15.40: Break.

Section 7 – Ants and other organisms. Chair: Jiří Schläghammerský

- 15.40-16.00: Sofia Panteleeva: Early development of complex hunting behaviour in ants. [Abstract](#)
- 16.20-16.40: András Tartally & Botond Szűcs: First records of *Rickia wasmanni*, a myrmecophilous fungus, and its *Myrmica* host in Hungary and Transylvania (Ascomycetes: Laboulbeniales; Hymenoptera: Formicidae). [Abstract](#)

- 16.40-17.00: Csaba Nagy, Viktor Markó and Jerry Cross: Effects of exclusion and supplementary honey feeding of the ant *Lasius niger* (L.) on apple aphids and aphidophagous predators.
- 17.00-17.20: Marianna Vályi Nagy and Sándor Csósz: Host ant specificity of large blue (*Maculinea alcon*: Lepidoptera: Lycaenidae) in the Carpathian Basin. [Abstract](#)

19 May 2007 (Saturday)

- 9.00: Excursion – Kiskunság National Park, Bugac.

Poster presentations:

- Orsolya Árendás, Miklós Bozsó, Róbert Gallé, Attila Torma & László Körmöczi: Composition of ant and associated arthropod (Heteroptera, Orthoptera, Araneae) assemblages of natural forest edges. [Abstract](#)
- Olga B. Biryukova: On trophobiotic interaction of ants with sawfly larvae of Blasticotomidae. [Abstract](#)
- Gregor Bračko: Present status of the Slovenian ant fauna (Hymenoptera: Formicidae). [Abstract](#)
- Wojciech Czechowski, Alexander Radchenko, Anna Stankiewicz & Julita Korczyńska: Curious wood ant colonies in Southern Finland: mixed nests or nests of hybrids? [Abstract](#)
- Jens Dauber & Robin Niechoj: Ant soil engineering increases grass root arbuscular mycorrhizal colonization. [Abstract](#)
- Elena A. Dorosheva: Behavioral mechanisms of inter-relations between red wood ants and ground beetles.
- Sophie E.F. Evison, Duncan E. Jackson, Adam Hart & Francis L.W. Ratnieks: Major role for minor workers on *Atta* leafcutter trails.
- Anton V. Gavriluyk & Tatiana A. Novgorodova: Effectiveness of aphid protection from entomophagous by different ant species. [Abstract](#)
- Jutta Heinrich, Jeanette Beibl & Jürgen Heinze: Sociogenetics and phylogeny in the slave-making ant genus *Chalepoxenus*.
- Michal Holec & Jindřich Havelka: Red wood ants – oak herbivores interaction: preliminary results of short time observation. [Abstract](#)
- Milada Holecová, Jozef Lukáš, Peter Humaj & Matúš Kúdela: Ant assemblages (Hymenoptera, Formicidae) in mosaic habitats of the Podunajská Nížina lowland (SW Slovakia).
- Jaroslav Holuša, Adam Véle, Jan Frouz & Eva Stebelská: The influence of forest management on the ants occurrence in the spruce growths.
- Ivan K. Iakovlev: Early development of aggressive reactions to predatory ground beetles in red wood ants. [Abstract](#)
- Veronika Jílková & Jan Frouz: The effect of *Formica polyctena* (Hymenoptera, Formicidae) ant nest on pH of surrounding soils.
- Katrin Kellner, Elisabeth Brunner & Jürgen Heinze: Policing and dominance behaviour in the clonal ant *Platythyrea punctata*.
- Kadri Kiran & Nihat Aktaş: A new record of social parasitic ant (*Plagiolepis xene* STÄRCKE) to Turkey. [Abstract](#)
- Klára Kiss & Ottília Kóbori: Intraspecific relations at *Formica pratensis* RETZIUS (Hymenoptera: Formicidae). [Abstract](#)
- Julita Korczyńska, Marta Gajewska, Małgorzata Pilot, Wojciech Czechowski & Alexander Radchenko: The possible origin of "mixed" colonies of wood ants. [Abstract](#)
- Gábor Lőrinczi: Ant assemblage composition and diversity in a set of sub-mediterranean habitats.
- Nóra Molnár, Dorottya Angyal & Eszter Gulyás: Investigations of aphid-ant mutualism in sandy habitat complex. [Abstract](#)
- Tatiana A. Novgorodova: The specialization in groups of ants attending aphid colonies. [Abstract](#)
- Tatiana A. Novgorodova & Svetlana G. Zhukova: The modes and speed of information transmission in *Formica pratensis* RETZ. (Hymenoptera, Formicidae). [Abstract](#)
- Ksenia S. Perfilieva: Some aspects of wing morphology of ants (Hymenoptera: Formicidae).
- Anna Szczuka, Julita Korczyńska, Maria Kieruzel & Ewa Joanna Godzińska: Social isolation and worker survival in obligatory slave-making ant *Polyergus rufescens*. [Abstract](#)
- Melanie Tista: Influence of grazing on ant communities.



Fig. 2: Participants exploring the puszta from horse carriage.

oak-forests (Petráková & Schlaghamerský). But one could also learn from Gallé & al. about how ants "perceive" landscape, and what one should be concerned about when carrying out monitoring studies. As the ant fauna of Southern and Eastern Europe is the least known of the continent the comprehensive faunistic studies on Slovenia (Bračko) and Turkey (Kiran & Nihat) filled some gaps in our faunistic knowledge. And finally the participants could enjoy such delicacies as the problems of New Guinean ant community ecology (Janda), North Mongolian *Myrmica* species (Woyciechowski), the problematic origin of mixed wood ant colonies (Korczyńska & al.) and mermithized *Myrmica* ants (Csósz), and the occurrence of *Rickia wasmanni*, a myrmecophilous fungi on Hungarian *Myrmica* (Tartally & al.).

However, the workshop was not all but science. Participants could enjoy an original Hungarian welcome dinner spiced up with the music of the "Molnár Dixieland Band", and if this was not enough, the Szeged wine fest served as the perfect stage for the most serious debates of all sorts.

The excursion to Bugac in the Kiskunság National Park (one of the oldest NPs of the country, located in the centre of Hungary) on the last day offered the well-earned



Fig. 3: Looking for *Lasius carnolicus* in the sandy juniper forest at Bugac.

ending. The scenery of the Hungarian puszta (vast grassland) and of the sandy juniper forest was unique. Horse carriages took the participants from the parking lot and carried us inside the protected area where we started out



Fig. 4: Prof. László Gallé tells us about the protected forest at Bugac.



Fig. 5: Finding *Lasius psammophilus* (from right to left): Marek Borowiec, Milan Janda, Kadri Kiran, Csaba Nagy, and Robert Schallehn.

on foot to the juniper forest. This strange forest of sparse tall junipers and bare sand spots among them awoke the "inner faunist" in many: first *Camponotus vagus* gathered people around an oak tree at the margin of the protected forest, but then, on entering the sandy forest the high ab-



Fig. 6: The famous "Pusztá Five".

undance of *Lasius carniolicus* and the rushing *Cataglyphis aenescens* workers on the sand surface won immediate attention, not to talk about some *Temnothorax* sp. nests. The sandy areas of Bugac house one of the strongest populations of *Lasius carniolicus* in whole Europe, a species which is unique in many ways (dependent colony founding, unusually small queen, patchy distribution in Europe) and this species acted like an international bait for ant people: almost everyone gathered around the discovered nest.

Lasius carniolicus was followed by another type of attraction: the horseshow of the betyárs (Hungarian outlaws in the XIXth century). The betyárs and generally people of the puszta were – like the American cowboys – renowned for their horsemanship, but also for frequently disregarding the law. Although the show in several aspects too obviously aimed at luring tourists – e.g., instead of Hungarian folk music mostly folk-inspired classical music, like Brahms' Hungarian Dances, was used as background –, there were some real highlights like the so-called "Puszta Five": five horses are driven in group by a single man standing on the last two horses' backs.

The field trip ended with a genuine Hungarian lunch at Bugac Csárda, where the pleasant atmosphere was ensured by, in addition to wine, a gypsy band, which turned out to be capable of playing almost any nation's most renowned folk songs, from Russian to Turkish.

The second CEWM was a clear success in every respect. Laszlo Gallé's organizing team did everything in their power to ensure the welfare and good mood of the participants. Let's hope that the string of lively Workshops will continue for long – we will meet again in 2009, somewhere in Central Europe, maybe in Germany as Jürgen Heinze kindly offered.