

# IUSSI, BRITISH SECTION

## (International Union for the Study of Social Insects)

### SPRING NEWSLETTER, MARCH 2005

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#### Annual Winter Meeting, Saturday 3 December, Queen Mary London

Lars Chittka (Queen Mary University of London) has very kindly offered to host the 2005 winter meeting. After an email survey of preferences, it was agreed (in a break from tradition) to hold the meeting on Saturday 3<sup>rd</sup> December at Queen Mary College University of London. Further details will be forthcoming in the September newsletter. Please contact Mark Brown ([mabrown@tcd.ie](mailto:mabrown@tcd.ie)) if you would like to give a talk at this meeting.

#### Other Forthcoming Meetings

Third European Congress on Social Insects, 21 to 26 August 2005, St Petersburg, Russia  
For information, please get in touch with Prof. Vladilen E. Kipyatkov (President of the Russian Language Section of the IUSSI) E-MAIL: [yk@VK1280.spb.edu](mailto:yk@VK1280.spb.edu) Web Page: <http://www.bio.pu.ru/win/entomol/Kipyatkov/index.htm>

#### The London Evolutionary Research Network: Third Annual Conference

Call for talks and posters from postgraduate and postdoctoral research students

Each year we celebrate the range of evolutionary research taking place in London. The conference is a friendly venue where young scientists can gain experience giving presentations in a conference setting, as well as networking with other researchers. We would like to promote appreciation for all disciplines and facilitate lateral thinking and synthesis of different disciplines. Therefore, we invite students from any discipline working on any aspect related to evolutionary biology. [For university

students: this is an excellent opportunity to get credit points towards your degree]. The conference is FREE and will take place Friday September 16, 2005 at the Natural History Museum. For more information please contact Nehal Saleh ([n.saleh@qmul.ac.uk](mailto:n.saleh@qmul.ac.uk)) or visit our website [www.anat.ucl.ac.uk/research/lern/index.html](http://www.anat.ucl.ac.uk/research/lern/index.html). Deadline for registration and abstract submission is July 31 2005.

XV International Congress of IUSSI - July 30 August 4, 2006 Washington, DC, USA  
<http://www.iussi.org/IUSSI2006.html>

## Other News from Social Insect Labs in the British Section

**Bristol:** it is a pleasure to announce that Sam Scholes has successfully defended his thesis on brood-sorting in the ant *Temnothorax (Leptothorax) albipennis*. We wish Sam all the best in his future endeavours.

**Ana Sendova-Franks**

**Copenhagen:** exciting news from Denmark. Patrizia D'Ettorre (currently in Jürgen Heinze's group at Regensburg) has been awarded a prestigious EU Marie Curie Excellence grant to found a new research group called CODICES (Chemical cOmmunication coDe of Insect soCietIEs) attached to Koos Boomsma's group at the University of Copenhagen. The group will be made up of two PhD students, one post-doc and Patrizia, and will use a multi-disciplinary approach (combining behavioural, chemical, electro- and neurophysiological, and genetic analyses) to understand chemical communication in social insects. Patrizia has been a member of the Italian, French and German sections of the IUSSI, and is looking forward to joining the British section in May when she starts this exciting new research programme.

**Queen Mary University of London:** Since its inception in 2002, Lars Chittka's bee sensory and behavioural ecology lab at Queen Mary's has been steadily growing and expanding both the scope of its research activities, and links with other labs. Tom Ings is using a variety of approaches to assess the invasive potential of commercially bred bumblebees on native populations. He is currently working with Dr Mairi Knight (Southampton) to find reliable genetic markers to distinguish between native British *Bombus terrestris audax* and imported European *B. t. dalmatinus*. Everything seems to be going well so far, as his first PhD manuscript is *in press* in *Oecologia*, and he won the prize for the best oral presentation at the Royal Entomological Society postgraduate forum in February. Nehal Saleh is looking at the significance of repellent scent marks on foraging behaviour in bumblebees. Currently she is trying to identify how the meaning of these marks may differ depending on the context in which they are found. She is also organising the 3<sup>rd</sup> annual conference of the London Evolutionary Research Network on Friday 16<sup>th</sup> September, for which there are still slots to contribute talks and/ or posters (for details see [www.anat.ucl.ac.uk/research/lern/index.html](http://www.anat.ucl.ac.uk/research/lern/index.html)). Elli Leadbeater joined the lab in September and her PhD project is focused on the social transmission of foraging information in bumblebees. She is currently conducting experiments to investigate how bees respond to the presence of conspecifics on individual flowers, flower patches, or species. Dr Nigel Raine is just over a year into a 3 year NERC project to study the adaptive importance of learning speed using a biologically important associative learning task: flower colour as a predictor of floral reward. Working with Oscar Ramos Rodriguez, Ralph Stelzer, and Tom Ings, he is currently testing the learning performance of *Bombus terrestris canariensis* and *B. t. sassaricus* as part of a population level comparison of variation in learning speed across the species range. Ralph Stelzer is an MSc student from the University of Wurzburg, who has joined the team in the lab for 6 months. Our most recent recruit, Dr Louise Cranmer, is currently conducting fieldwork investigating the evolution of bird pollinated plants in Tenerife. She is gathering data on the true pollinators of *Canarina canariensis* and *Isoplexis canariensis* and assessing whether there is a reduction in fitness when either birds or bees are excluded from these plants.

For more information you can view our new lab website, which thanks to Oscar is now up and running at:

<http://www.biology.qmul.ac.uk/research/staff/chittka/chittkalab/index.html>

**Nigel Raine**

**Sheffield:** During January 2005, five entomologists swapped England's chilly winter rain for the warmth – and insects – of tropical Brazil. Francis Ratnieks organized the trip as an opportunity for his PhD students,

Elva Robinson and Margaret Couvillon, to do field work during the otherwise-sedentary winter months. The trip also allowed Francis and his colleagues, former Sheffield postdoc Adam Tofilski, now back home with the Agricultural University of Krakow, and social insect new boy Professor Jonathan Bacon, University of Sussex, to spend time in the field as a respite from administration, teaching, and in the case of Jonathan, being a dean and exploring the wonderful world of *Drosophila* genetics.

Our first few days were spent at the Laboratorio de Abelhas (Bee Laboratory), University of São Paulo, São Paulo (director: Professor Vera Imperatriz-Fonseca), after which we traveled 200 miles north to Fazenda Aretuzina, a coffee farm turned conservation and stingless bee centre by Professor Paulo Nogueira-Neto, the former head of the Laboratorio de Abehllas. The center has grown from its birth in the 1940s to be a centre of social insect research, home to several hundred hives of stingless bees, at least one wild ant colony per square foot, wasp nests suspended from rafters, termite colonies under benches, and dangling bivouacs of social spiders. The paradise of Aretuzina provided us with beauty and peace in which to pursue our interests. Elva investigated organization of ant colonies and completed two projects using two different species of *Pheidole* ants, one looking at sand pile building and the other on foraging networks. Margaret busied herself with two projects, one to study the relationship between nest entrance size in Meliponinae colonies and traffic intensity and the second to study nestmate recognition in a species known locally as Marmelada (*Friesomelita varia*). Adam researched suicidal nest closing by workers in *Forelius pusillus* and soil dumping in *Pheidole fallax*. Francis and Jonathan, joined by Dr. Fabio Nascimento of University of São Paulo in Riberão Preto, were interested in the silk ant *Campinotus senex* and social spiders. Francis worked out protocols, maintained our motivation during bad weather, helped with project ideas, acted as trip photographer, and ensured that our free time was productively occupied with extra training by showing quality cult-classic movies like *Them!* and *The Swarm* (typical line from this highly intellectual and scientifically accurate movie – “bees, bees, millions of bees”).

Despite our having to dodge the curious fingers of the young children living on the farm, the eager affection of farm dogs, the occasional foray of one of the peccaries kept near our bedrooms, and the delights of the rainy season, we greatly enjoyed our stay in the tropical wonder of Brazil. We return to England slightly tanned, much refreshed, and eager to begin writing up a few hundred papers.

**Margaret Couvillon**

**Turku: Jouni Sorvari** is about to finish his PhD-studies on “Habitat sensitivity in *Formica* ants”. The study, partly made in cooperation with Prof. Lotta Sundström (Helsinki), is a mixture of evolutionary ecology and environmental ecology. A web page (<http://users.utu.fi/jousor/>) on the studies has been made and will be updated as the study progresses. Jouni recently visited Canada for a few months (July 2004 – January 2005) working with Prof. Ron C. Ydenberg in order to generate a model on the economy of social behaviour in ants. The model seems promising and its testing is likely to be a topic for Jouni’s future post-doc period.

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## Job Vacancies

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### 1) POSTDOC ON CAPE HONEYBEE SOCIAL PARASITES, UNIVERSITY OF STELLENBOSCH, SOUTH AFRICA

Postdoctoral position studying the effect of honeybee brood pheromones on the success of *A.m. capensis* social parasites, University of Stellenbosch, South Africa. A full-time Postdoctoral Research position is available from July 2005 at the University of Stellenbosch. The position is supported from a combined University postdoctoral grant and National Research Foundation grant, and is tenable until July 2007 (ZAR 110 000 per annum including a ZAR 12 000 relocation allowance). The appointee will join the research group of Dr Theresa Wossler with the primary objective of identifying and quantifying larval pheromones of the two southern African honeybee subspecies and the role of brood pheromones in reproductive regulation, particularly in the so-called capensis calamity. Applicants should have a behavioural ecology and/or chemical background and who can bring new ideas and techniques to the research group. The preferred starting date is July 2005. Interested applicants should send CV, names and e-mail addresses for three references, and a one-page letter of interest including a proposed start date to Theresa Wossler at [wossler@sun.ac.za](mailto:wossler@sun.ac.za). Closing date is 30 April 2005. General information about the University may be found at: <http://www.sun.ac.za/index.asp>

## 2) PhD STUDENTSHIP IN EVOLUTIONARY IMMUNOLOGY, UNIVERSITY OF LEICESTER, U.K.

BBSRC Studentship: Opening a blackbox in evolutionary immunology.

Parasites are ubiquitous and affect a wide array of host characteristics at all levels of biological organization.

Consequently, understanding their relationships has important ramifications for a variety of scientific fields.

The interaction between the bumblebee and its trypanosomal gut parasite *Crithidia bombi* has become one of the central models for the study of the evolutionary ecology of immune systems. However, so far this system has been considered as a black box. For our understanding of the system to develop, more must be known about the specifics of the host parasite relationship.

This studentship will delve into the mechanisms of their interactions. What is the actual pathology of *C. bombi*? Its fitness effects on bumblebees are well known but what tissues or processes are actually damaged? On the host side, many details are now known about the insect immune system, but what components of this system are used by the bumblebee to defend against this gut parasite? And what is the basis of the well-known specificity between different strains of *Crithidia* and individual bumblebee colonies.

Previous studies have shown that *C. bombi* can artificially infect *Drosophila*. One exciting possible research direction is to use the candidate gene approach to transfer knowledge from this artificial system into *C. bombi*'s natural host, the bumblebee.

Many parasites, including important species that affect humans and livestock, must survive the harsh environment of insect guts to complete their life-cycle. Hence, understanding how insects protect themselves against such parasites has immediate practical implications.

At a minimum, applicants should have or expect to receive an upper second class honours degree in biology or a related discipline. The position is only fully funded for a British resident. Send your CV (including names of academic referees) and a one page statement on why you feel this project is right for you directly to Eamonn Mallon (ebm3@le.ac.uk , [www.le.ac.uk/bl/ebm3/homepage.html](http://www.le.ac.uk/bl/ebm3/homepage.html)). The deadline for applications is 10<sup>th</sup> of May 2005 with the studentship starting September/October.

## 3) ENDEAVOUR RESEARCH FELLOWSHIPS, AUSTRALIA

Applications are now open for these fellowships, to be taken up in 2006. The Endeavour Australia Postdoctoral Research Fellowships provide financial support for postgraduate students and postdoctoral fellows to undertake short-term research (4 to 6 months) in Australia. The deadline for applications is 22 July 2005. For more details, including eligibility requirements etc. please see the following web site: [www.dest.gov.au/international/awards/end\\_postgrad.htm](http://www.dest.gov.au/international/awards/end_postgrad.htm)