IUSSI, North-west European Section (International Union for the Study of Social Insects) **Spring Newsletter 2011**

Officers of the British Section of the IUSSI

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Section news

NW European IUSSI Winter Meeting 2011

The Winter 2011 meeting of the North-West European section of IUSSI will take place at the University of Sussex on Thursday and Friday, 15-16 December.

The University of Sussex is located on the outskirts of Brighton, which is served by Gatwick Airport. Brighton is a lively, cosmopolitan, seaside town. The campus may be reached from Brighton by train, bus, or car.

The meeting will begin mid-morning on Thursday with registration/coffee. Lunch will be provided, and there will be a conference dinner that night. We'll convene again Friday morning, and the meeting will run until midafternoon, with breaks for lunch and tea.

Students will be offered a subsidy.

Posters will be displayed during a 1 hour poster session. Attendees are encouraged to bring a poster and stand by it during this session.

If you are interested in giving a talk, please submit a title and short abstract (< 300 words) to Roger Schürch (R.Schuerch@sussex.ac.uk) before the 2nd of September 2011. Please state your position (i.e. PhD-Student, Postdoc etc.). There will also be invited speakers.

Upcoming Meetings

David Nash keeps a comprehensive and regularly updated webpage of upcoming meetings at http://www.iussi.org/meetings.html.

30 June - 2 July 2011 International Social Insect Genomics Research Conference



Kingkey Palace Hotel, Shenzhen, China

The conference aims to be a scientifically rewarding and enjoyable experience, providing an opportunity to advance genome-related research on social insects by active communication and building collaborative networks between disciplines and continents. With the anticipated growth in social insect genomic resources, this conference will be a timely opportunity for exploring potential research synergies across the national and taxonomic social insect research communities. We anticipate that one of the key results of this conference will be a prioritized list of at least 100 target social insect species for future genome projects. Find out more details at the conference web site: http://ldl.genomics.org.cn/event/registration.jsp Online abstract submission (ten open talk slots) is auxil.genomics.org.nl/event/registration. The deadline for registration is **30 April 2011**

25-30 July 2011



Behavior 2011

Indiana University, Bloomington, Indiana, USA The first-ever joint meeting of the International Ethological Conference (IEC) and the Animal Behavior Society (ABS). The organizers "would very much like to encourage scientists working on the behavior of social insects to attend and present their findings at this meeting." For more details, see the <u>meeting website</u>.

1-7 August 2011 + May 2012

Honey bee functional genomics tools

Penn State University, U.S.A. & University of Life Sciences, Norway This practical and theoretical course in honey bee RNA interference technology has two modules: The first will be held at Penn State, August 1-6 2011, together with an international symposium on functional genomic tools in honey bees (August 6-7 2011). The second module is scheduled for mid May 2012, and will be held at the University of Life Sciences, Norway (dates TBA) The RNAi course information and registration page is now live at: http://agsci.psu.edu/honey-bee

Application deadline: May 15 2011; 12 applicants will be selected to attend the course.

The symposium is open to all, nd is free to attend, but registration is required (deadline 15 July 2011)

4-14 August 2011

Ant Course 2011

Southwestern Research Station, Portal, Arizona, USA This year's Ant Course will be taught from August 4 - 14, 2011 at the Southwestern Research Station (SWRS) in Portal Arizona (<u>http://research.amnh.org/swrs/</u>). The Station is centered amid the richest ant fauna in North America. For further information please see <u>http://research.calacademy.org/ent/courses/ant</u>. The deadline for applications was **1 April 2011**.



ESEB2011 - The 13th Congress of the European Society for Evolutionary Biology

Tübingen, Germany

ESEB congresses typically attract a large contingent of social insect researchers. This year there are no specifically social insect symposia, but many in which social insect research is key (for example Mutualism, Family interactions, Division of Labour, Chemical Communication). Registration is now open, and those who register before **28 February** can do so at a reduced rate. More details on the congress web site: www.eseb2011.de

4th Central European Workshop of Myrmecology



Cluj-Napoca, Romania The organizing committee invites you to participate in the 4th CEWM. For more information, please see the workshop web site: <u>http://4cewm.com/</u> Registration is now open, and will close on **31 May 2011**.

21-25 September 2011 Apimondia 2011

Buenos Aires, Argentina



Every two years all the beekeepers of the world gather with the apicultural researchers, supplies manufacturers, honey-traders and all the representatives of the apicultural sector, in a big event that is the International Apiculture Congress of APIMONDIA. In 2007, after several presentations, Argentina was chosen to be the venue in 2011. Find out more from the <u>Apimondia2011 web site</u>. Closing date for abstract submissions was **10 March 2011**

2-5 October 2011

Sixth International Symposium on Molecular Insect Science

Amsterdam, The Netherlands

The Sixth International Symposium on Molecular Insect Science is the first of the series to be held outside of the USA. Previous Symposia, organized by the University of Arizona's Center for Insect Science, have been met with great enthusiasm. By holding the symposium in Amsterdam, in collaboration with Elsevier, it is hoped that the meeting will be even more accessible to scientists and their students in Europe, Asia, Australasia, and elsewhere.

Abstracts are now being accepted in several categoriesrelevant to social insect researchers.

To submit your abstract, or for more information, visit: <u>www.molecularinsectscience.com</u> Submission deadline: **April 8th 2011**

18th-19th October **'Wood Ant Symposium'** at the The James Hutton Institute, Aberdeen 18–19th October 2011 http://www.hutton.ac.uk/events/wood-ant-symposium

26-30 August 2012 EUROIUSSI2012 - Combined European IUSSI Sections Meeting



Hotel Tuscany Inn, Montecatini Terme, Tuscany, Italy The next meeting of the combined European sections of the IUSSI will be in Italy at the end of August 2012. The meeting will be held at the Hotel Tuscany Inn (http://www.hoteltuscanyinn.com/en/), a modern building within walking distance from the centre of the city. The conference centre has 3 rooms with adjustable walls that allow the organization of events from 10 to a maximum of 380 people.

4-6 September 2011 EurBee 2012

Martin-Luther-University, Halle an der Saale, Germany The 5th European Conference of Apidology will take place in Halle in September



2012. The congress is the major European platform for bringing together international scientists with an interest in all aspects of bee biology. The biennial conference serves as a communication platform for top EU research in Apidology and hosts the pan European research networks BEEDOC, STEP and COLOSS.For more information, please download the flyer, or visit the web site: www.eurbee2012.uni-halle.de

13-18 July 2014 XVII IUSSI International Congress Cairns, Australia Come for the science, stay for the reef and rainforest. The Australian Section will be hosting the next international congress of IUSSI. The President is Ben Oldroyd, and the organizing committee currently comprises Madeleine Beekman, Simon Robson and Judith Reinhard. The committee will be expanded closer to the event. The Congress will be held in the magnificent Cairns Convention Centre, and there will be a brilliant selection of post conference tours, etc. There will be discounts for student delegates, and students are strongly encouraged to participate and to present. Please mark the dates in your calendar. We have registered the domain name www.IUSSI2014.com. We'll go live as soon as we can.

Lab News

Copenhagen – Centre for Social Evolution

A large proportion of the Copenhagen group (including **Koos Boomsma**) are currently in Panama, either carrying out the usual annual fieldwork on fungus-growing ants, or, as something new this year, teaching and/or participating in a field course on tropical behavioural ecology organized by **Rachelle Adams**. Our section secretary, **Bettina Markussen**, is also joining in with the Panama trip this year, after hearing everyone else talking about it for many years.

They are also effectively escaping the building renovation work that is being carried out in Copenhagen, and which has forced us to close down much of our usual lab work. Unfortunately this is running months behind schedule, to everyone's frustration, so yet other members are or have been spending time away from Copenhagen to get their planned work completed (Thank goodness for **Patrizia d'Ettorre**'s GC-MS lab in Paris!). The renovations must be completed by mid-August, so we hope all will be back to normal in time for the next newsletter.

Despite these upheavals, the group continues to expand, and we had a new intake of Ph.D. and M.Sc. students in late 2011/early 2011: **Sämi Schär** from the University of Zürich is carrying out a project looking at various aspects of the ant-exploitation strategies of socially parasitic *Maculinea* butterflies compared to their mutualistic relatives. He is being supervised by **David Nash**. **Dóra Huszár** from Debrecen University in Hungary joined us for a project that will examine variation in mating frequency in *Myrmica* ants, under the supervision of **Jes Søe Pedersen**. **Andreas Kelager** started a PhD on the distribution and conservation aspects of trophic interactions under future climate change using *Maculinea alcon* and its two hosts *Gentiana pneumonanthe* and various *Myrmica* species. The project is jointly supervised by David Nash from CSE and Hans Henrik Bruun from the Center for Macroecology, Evolution and Climate, University of Copenhagen. **Anne Andersen** also joined us for an M.Sc. project to look at the changes in genetic variation that have taken place in the populations of *Maculinea arion* reintroduced to the U.K. compared with the Swedish population they were reintroduced from.

Postdoc **Michael Poulsen** spent a few weeks in South Africa earlier in the spring, along with former lab member Duur Aanen, where they collected lots of fungus-growing termite material for, amongst other things, metagenomic work. Current Ph.Ds are also progressing well. **Sandra Breum Andersen** has just returned from three-and-a-half months in Brazil, and a short stay at Pennsylvania State University, continuing work on *Cordyceps* fungi with former lab member **David Hughes**. **Luigi Pontieri** has also just returned to Copenhagen, but in his case from a short visit to Paris to carry out his GC-MS work. **Pepijn Kooij** has not only been working hard on his own project, but has taken over the day-to-day running of our group web site. **Marlene Stürup** is still busy counting ant sperm, while **Zse Huei "Zoe" Yek's** work on metapleural glands

has resulted in a review paper in Biological Reviews. **Nick Bos** is currently in Toulouse for a couple of months, working in Martin Giurfa's lab.

Bachelor student **Pil Rasmussen** joined us in May for a short research project on wing shape and dispersal in *Maculinea* butterflies. Meanwhile, we are strengthening links with Eastern Europe, with exchange student **Martyna Zwoínska** from Poland joining us for a full year for a project on Behaviour modifications in the leafcutter ant *Acromyrmex octospinosus* by insect entomopathogenic fungi and bacteria, supervised by **Annette Bruun Jensen** and Zoe, and a three-month visit by **Czekes Zsolt** from Babes-Bolyai University, Romania, to analyze his data on *Maculinea* oviposition in collaboration with David Nash and bachelor project student **Morten Lund Westerdahl**. Closer to home, **Jelle van Zweden** paid us a three week visit around Easter (and will rejoin us for longer in the autumn), and **Henrik de Fine Licht** has also been a frequent visitor, completing some lab work here, despite spending most of his time the wrong side of the Øresund channel.

We welcomed back research technician **Charlotte Olsen** from her maternity leave in December, and she has taken over responsibility as technician for the GC-MS lab. At the moment we also have **Shukriya Barzinci** working with us. She carried out some of her laboratory technician training with us in 2010, and has now returned for a three-month appointment to analyse microsatellites of *Maculinea* butterflies.

We also had a couple of long-term members who have left the group since the last newsletter. Lana **Vojvodic** successfully defended her Ph.D. last October, and after a short appointment as a postdoc, has now taken up a position at the University of Arizona, Tucson. Tim Linksvayer's post doc came to an end at the end of January, and he has now returned to USA to take up a position as an Assistant Professor at University of Pennsylvania. Both Lana and Tim will continue with work involving social insects, so we look forward to future collaborations. Anna Mosegaard Schmidt is currently visiting Tim in Pennsylvania to complete some of their work on pharaoh ants, having successfully defended her Ph.D. last October. Luigi is now running the final round of selection experiments with these ants in Copenhagen.

Janni Larsen defended her M.Sc. thesis on recognition abilities of different castes in ants in November, since when she has been employed as a research assistant, including a stint in Costa Rica, helping Rachelle with *Megalomyrmex* collecting, and she is currently helping with the field course in Panama. In the world of evolutionary medicine, **Birgitte Hollegaard Hartsteen** also successfully defended her Master's thesis on the evolutionary duality of preeclampsia in February, and is currently acting as a research assistant, working on additional projects with group-leader **Sean Byars**.

A number of other projects are approaching their end over the summer, so look out for more news on the progress and whereabouts of **András Tartally**, **Luke Holman**, **Volker Nehring** and **Rasmus Stenbak Larsen** in the next newsletter. Also look out for the publication of the first leafcutter ant genome, which has now been completed by **Sanne Nygaard**, **Morten Schiøtt** and colleagues from across the globe.

Finally, we will send quite a large delegation to the European Society for Evolutionary Biology meeting in Tübigen in August, so maybe we'll see you there – although I think we're sending an even larger delegation to the wedding of Matthias Fürst and Lisi Stafflinger in June, where we're perhaps likely to see a few of you too S

David Nash

The Paxton Lab (Queen's University Belfast)

Robert continues to shuttle between Halle (address below) and Queen's University Belfast, with occasional forays abroad, in Mexico for spring 2011 to wrap up an EU-Mexico project called MUTUAL on bee biodiversity and land use, in summer 2011 to the Rocky Mountain Biological Lab in Colorado, USA, to work on high altitude populations of the facultatively eusocial sweat bee *Halictus rubicundus*. Postdocs Tomás Murray and Antonella Soro continue at Halle, PhDs Lorraine McKendrick and David Trew at Queen's.

Departures: Since the last newsletter, PhD student Emily Davis has successfully defended her PhD thesis on the conservation genetics of the rare solitary bee *Colletes floralis*, a specialist of Irish and Hebridean coastal sand dunes.

Arrivals: in January we welcomed to Halle Dr Vincent Doublet to the group as a postdoc on the EU funded project BeeDoc (http://www.bee-doc.eu/index.html). Vincent, recently PhDed in Poitiers, France, will address the interactions between pathogens and pesticides on honey bee health. Then in March Dr Dino McMahon arrived from Oxford to take a postdoc on the BBSRC/IPI funded project 'Emergent Diseases'

(http://beediseases.org.uk/), in his case to investigate interactions among pathogens and their impact on honey bee health. Both have invested in thick bee suits! Finally, in Halle we received two new members, Samuel Boff from São Paulo on a one year sandwich PhD placement to work on diploid males in Brazilian orchid bees and Rita Radzeviciute from Lithuania on an exchange placement to cut her hands on molecular genetic analyses.

And the new address:

Institute for Biology/General Zoology Martin-Luther-Universität Halle-Wittenberg Hoher Weg 8 D-06099 Halle (Saale) Germany

Robert

The Bourke Group (University of East Anglia)

We've been pleased to welcome some new members to the group since the last newsletter. First, two new PhD students have now joined us. David Collins arrived in October to start a PhD project on the role of microRNAs in the caste determination of bees, supervised by Andrew Bourke and a UEA colleague, molecular geneticist Tamas Dalmay. Henry Ferguson-Gow arrived at the same time to start a PhD project on the evolution and diversification of ants from a comparative perspective. This project is jointly supervised by Andrew at UEA and Kate Jones and Seirian Sumner at the Institute of Zoology (IoZ), Zoological Society of London. Second, we recently welcomed Florian Guidat from the Université Henri-Poincaré, Nancy, France, who is carrying out a three-month undergraduate placement during which he will help us out with our Meanwhile, of existing group members, Edd Almond and Tim Huggins are bumble bee projects. continuing their work, which is collaborative with Joel Parker at the University of Southampton, investigating the effect of social conflicts on ageing in the bumble bee Bombus terrestris. This project recently employed a new PDRA, Gabrielle Lockett, who will conduct the genetic part of the work in Southampton in parallel with Edd and Tim's behavioural experiments at UEA. Lucy Field is now busy writing up her PhD project testing aspects of kin selection theory in the ant, Leptothorax acervorum. Jacob Holland is in the second year of his PhD project on the influence of the queen on the colony cycle in B. terrestris. Last summer, together with Claire Carvell and Matt Heard at the Centre for Ecology and Hydrology and Bill Jordan and Seirian Sumner at IoZ, Andrew was fortunate enough to be awarded an Insect Pollinators Initiative grant on space use by bumble bee queens and workers in relation to fine-scale habitat structure. This project has now employed a PDRA; she is Stephanie Dreier, who will be based at IoZ. Finally, Andrew's book, Principles of Social Evolution, has now been published and is available at all good retail outlets (and why stint at the paperback? -- buy a hardback too).

The TEAM::ANTZZ Lab! (Helsinki)

Winter and most of the snow is gone and field work is in full swing. Also the past six months have seen some changes to the group in Helsinki. A new PhD student, **Claire Morandin** from Uppsala will be working with **Heikki Helanterä** on the evolution of gene expression in unicolonial ants. **Eva Schultner**, now in her second year of studies on cannibalism in *Formica* ants, was awarded a conference trip for the best presentation at the yearly Spring Symposium in Helsinki. A third PhD student, **Jenni Paviala**, will also start in August to work on evolutionary genetics of unicolonial ants. **Helena Johansson** started in January as a post-doc jointly supervised by **Lotta Sundström**, **Perttu Seppä** and **Heikki Helanterä** on the population genetics of *Formica fusca*. **Kalle Trontti** continues with his research on oxidative stress, immune defense, and ageing in *Formica exsecta*, as well as a part-time MES lab coordinator. **Martina Ozan** has been on maternity leave, but will return to the work on her PhD project on reproductive partitioning in *Formica fusca*. **Anton Chernenko** likewise is taking some time off for paternity leave, and otherwise is busy finishing the last three manuscripts for his PhD thesis, with the aim to hand in his thesis by the end of the year. Finally, **Lotta Sundström** will soon finish her one-year sabbatical from the Academy of Finland, having spent a two-month stint in London to work with Mark Brown on ant parasites, and another two months in Paris working with Patrizia D'Ettorre.

In the meantime **Hannele Luhtasela-El Showk** has finished her Master's thesis, whereas **Lea Heikkinen** and **Ulla Vattulainen** are working on theirs. During the summer the group also will host several students as research apprentices, **Annu Tertsonen**, and **Sanja Hakala** from Helsinki.

The Hughes Lab (University of Leeds)

Ant and bee work has been continuing apace at Leeds. Crystal Frost is now entering the writing up stage of her PhD project investigating Wolbachia in fungus-growing ants. Rowena Mitchell and Claire Asher are now mid-way through their PhD studies of royal cheating in leaf-cutting ants and dominance hierarchies in dinosaur ants, respectively. Claire is currently away in Brazil at a site that is apparently almost swarming with dinos and will be moving down to London soon after she gets back to start on the transcriptomics part of her project, in collaboration with Seirian Sumner at the IoZ. The group has recently been joined by Adam Smith who has been based at STRI in Panama for the last few years. Adam is funded by a Marie Curie International Incoming Fellowship and will be studying the neurobiology of genetic polyethism in Acromyrmex. Meanwhile the apiary is now buzzing with activity as the new field season gets underway, being well managed by Bill Cadmore. Kat Roberts is mid-way through her PhD studying genetic variation in honeybee resistance to Nosema microsporidians and their infection dynamics. Our investigations of the effects of host-parasite diversity on transmission and virulence in fungal parasites of honeybees are continuing, with Kirsten Foley studying stonebrood for her PhD, while Sophie Evison has recently rejoined us to work with Paula Chappell on the chalkbrood parasite. Last but not least, Pete Graystock is now beginning the second field season of his PhD studying pathogen spillover from commercial bees to bumblebees in collaboration with Dave Goulson and Ben Darvill at the Bumblebee Conservation Trust.

The Brown Lab (Royal Holloway, University of London)

It seems a long time since the last newsletter, which has got to be a good sign of a busy group! We had the pleasure of hosting Lotta Sundstrom in the autumn, who spent a lot of time looking at ant innards in search of parasites. We were sorry to see her go, but hope she's enjoying the rest of her sabbatical! In November, after a competitive interview process, Matthias Fürst joined the lab officially as a new post-doc on the IPI grant to look at emergent parasites in bumble bees. He's been very busy ever since, not least in getting prepared for his wedding later this spring! In January we were joined by our new technician, Oscar Ramos Rodriguez, who is working for both us and Nigel Raine's group. Oscar worked with Lars Chittka's group for many years, so he's brought a wealth of experience with him and we're busy cross-pollinating protocols. The unseasonably good weather of early 2011 brought the bumble bee queens out with a vengeance, almost a month early. Since then, Matthias and Catherine have been busy either in the field or the bee room, and their efforts have yielded fantastic success, producing lots of lovely colonies for us to play with. Meanwhile, in Ireland, Jim Carolan was appointed as a lecturer at the National University of Ireland Maynooth. Jim is still collaborating with us, and it's great to have a new colleague in the Irish social insect world. Again in Dublin, Joe remains busy with his transcriptomics. Finally, in March we hosted the UK Bumblebee Working Group Meeting - an opportunity for bumblebee researchers to get together and swap ideas and progress. Everyone seemed to have a productive time, and much networking was done in the pub afterwards

The Raine lab (Royal Holloway)

Since the last newsletter there have been a couple of new arrivals in the lab. Firstly, Richard Gill has been persuaded to swap ants for bees (at least temporarily). In March, he moved from Rob Hammond's lab in Leicester to take on a 3 year postdoc position working on the Insect Pollinator Initiative project investigating the possible behavioural effects caused by sublethal exposure to pesticides in bees. As this project involves work on both honey bees and bumblebees, were in the process of setting up an apiary at RHUL. The second appointment is Oscar Ramos-Rodriguez as a bee research technician. Oscar will be working to support Insect Pollinator Initiative funded projects in both Mark Brown's and my labs at RHUL.

The Martin Lab (Sheffield)

The Sheffield group continues to expand slowly with the addition of two volunteer students Joe and Kayleigh. Although Kayleigh has been awarded a faculty summer scholarship so will be with us through the summer. Ricky Kather got her first paper accepted during the winter on task recognition in honeybees with almost no changes. The second one is almost ready for submission. Ricky is currently away on a two week queen rearing training course with her CASE partner then its back to field experiments. Liz has almost finished her 4th yr project with us and is currently preparing her departmental presentation with a paper hopefully to follow. Rhian our resident ant expert is currently collecting in North Africa and next week working with Paington Zoo on there blue butterfly conservation project. We had a major breakthrough on this during the winter so things are going well. Laura continues to do wonders in the genetics lab extracting and quantifying honeybee viruses. I was fortunate enough to spend another 2 months doing field work in Hawaii last year.

This allowed us to collect more data to complete what is developing into a very exciting story which we hope to get submitted soon. This is our last field season with the ants in Finland so we have a couple of big (genetic) experiments planned. We have Emma on board to do the complex stuff while I get to collect the ants from Finland and have already had my first visit so we are certainly keeping the GC-MS at Keele busy. We hoped to be joined by a vet from the middle east to do a honeybee viral associated PhD in the group starting later this year. So all in all it's going to be another very busy and no doubt productive year. We are all well embedded in the new building and have loads of lab and office space so are happy to try and accommodate anyone interested in joining our group to study the chemical ecology of social insects and their viral pathogens.

Stephen Martin (leader of the Sheffield group)

CBEES research group, Turku

Tapio van Ooik will start as a postdoc in June. He will work with various themes of evolutionary ecology in social insects. The PhD students Salla-Riikka Vesterlund and Marja Haatanen are now somewhere in the middle of their projects on bumblebees (Salla-Riikka) and ants (Marja). The five master students Salla Härkönen (myrmecophiles), Riikka Elo (myrmecophilous mites), Maija Arvonen (Myrmica rubra overwintering), Heini Pollari (pollination ecology) and Maria Kakko (bumblebees) are busy with their projects. A couple of the projects are expected to be ready soon. Dr. Irena Grześ (Krakow, Poland) visited our lab in February. We are planning to collaborate in her special area: heavy metals and ants.

Turku is a European Capital of Culture in this year (along with Tallinn, Estonia). In addition to his duties as a group leader, **Jouni Sorvari** is leading a project "Antspotting in Turku" that is included into the official programme of the year. The project consists of combination of antspotting routes, live ant colonies in terrariums, special ant-themed happenings and exhibitions for children and a unique ant video art "Workers" (by artist **Anni Rapinoja**) just at the side of Central market place of Turku. The main goal of the project is to increase awareness on <u>ant cultures</u> around and in human cities. Another goal is to popularize science of ant ecology. At the same time, the project will provide information about the environment and the diversity of nature. Link to the Antspotting project web page: <u>http://www.turku2011.fi/en/antspotting-turku_en</u>