

List of poster presentations for IUSSI2010

Presenting authors are marked *

Code is of the form: "Symposium number – Abstract number"

- | Code | Title | Author(s) |
|------|---|---|
| 1-1 | Does forest fragmentation affect patterns of ant-diaspore interaction? a study case using synthetic diaspores | Ana Gabriela D. Bieber*, Paulo S. D. Silva, Paulo S. Oliveira |
| 1-2 | Consumption of non-myrmecochorous diaspores positively affects larval development in <i>Odontomachus chelifer</i> ants | Claudia Bottcher*, Paulo S. Oliveira |
| 1-3 | Effects of fire on interactions between ants and two species of myrmecochorous plants | Kieren Beaumont, Duncan Mackay*, Molly Whalen |
| 1-4 | Effects of fire and elaiosome condition on dispersal by ants of seeds of a myrmecochorous plant, <i>Pultenaea daphnoides</i> | Kieren Beaumont, Molly Whalen*, Duncan Mackay |
| 1-5 | Ant diversity in Croatian peat bogs | Jelena Bujan, Andreja Brigić, Ana Ješovnik* |
| 1-6 | Density dependent effect of a <i>Formica exsecta</i> supercolony on ant community composition and foraging success of rivals | Zsolt Czekes*, Katalin Erős, Zsófia Szöke, István Maák, Bálint Markó |
| 1-7 | Revealing litter ant community assembly rules at different scales through ecological trait and phylogenetic tests | David A. Donoso*, Adam D. Kay, Michael E. Kaspari |
| 1-8 | Foraging microhabitat and food resource use in temperate forest ant communities | David Fowler*, Jean-Philippe Lessard, Nathan J. Sanders |
| 1-9 | Sociality and resource use: insights from a community of social spiders in Brazil | Jennifer Guevara*, Marcelo O. Gonzaga, João Vasconcellos-Neto, Leticia Avilés |
| 1-10 | Arboreal ants and termites in a New Guinean lowland forest: diversity, coexistence patterns and nesting habits | Petr Klimes*, Milan Janda, Cliffson Idigel, Maling Rimandai |
| 1-11 | The importance of cooperation at small colony sizes: the allee effect in ants | Gloria M. Luque*, Franck Courchamp |
| 1-12 | The relationship between ant density, productivity and aggression | Andreas P. Modlmeier*, Susanne Foitzik |
| 1-13 | Tradeoffs, competition, and coexistence in eastern deciduous forest ant communities | Katharine L. Stuble*, Mariano Rodriguez-Cabal, Gail A. McCormick, Nathan J. Sanders |
| 2-1 | Regional multi-analyses of Argentine ant populations in Southern Europe | Olivier Blight*, Laurence Berville, Valérie Vogel, Abraham Hefetz, Marielle Renucci, Jérôme Orgeas, Laurent Keller, Erick Provost |
| 2-2 | Native "invasive" ants: a novel evolutionary trend in the age of global change? | Grzegorz Buczkowski |
| 2-3 | Predictive factors in the potential location of the Argentine ant winter nests | Mireia Diaz*, Martha Lucía Enríquez, Sílvia Abril, Crisanto Gómez |

- 2-4 **Assessing the effects of the extirpation of Argentine ant winter nests on native ants composition and diversity**
Martha Lucía Enríquez*, Mireia Díaz, Sílvia Abril, Crisanto Gómez
- 2-5 **The effect of biotic and abiotic factors on the behaviour and ecology of *Myrmica rubra* colonies**
Elizabeth J. M. Evesham
- 2-6 **Heterozygosity-Fitness Associations in the Invasive Fire Ant *Solenopsis invicta***
Mark Fisher*, Kenneth Ross
- 2-7 ***Pisonia grandis* monocultures limit the spread of an invasive ant - a case of carbohydrate quality?**
Benjamin D. Hoffmann*, Alice Kay
- 2-8 **Is the evolution of male morphology related to colony budding in the invasive Argentine ant, *Linepithma humile*?**
Jo-anne Holley*, Alexander Wild, Andrew Suarez
- 2-9 **Bacterial communities in *Solenopsis invicta* and *Solenopsis geminata* characterized by 16S-amplicon 454 pyrosequencing**
Katrin Kellner*, Heather D. Ishak, Ruchira Sen, Eli Meyer, Scot E. Dowd, Robert M. Plowes, Edward G. LeBrun, Ulrich G. Mueller
- 2-10 **Comparative toxicity of two fire ant venoms to agricultural pests in Taiwan**
Li-Chuan Lai, Wen-Jer Wu, Rong-Nan Huang*
- 2-11 **Polarized aggression and cuticular hydrocarbon diversity in natural populations of the invasive ant *Lasius neglectus***
Rasmus Stenbak Larsen*, Jesper Mosbacher, Luke Holman, Jes Søe Pedersen
- 2-12 **Unicoloniality of *Wasmannia auropunctata* (Hymenoptera, Formicidae) in Gabon: behavioural and chemical analyses**
J. B. Mikissa, S. Devers, C. Errard, D. Fresneau, J. L. Mercier*
- 2-13 **Impact of *Wasmannia auropunctata* (Roger) on plant ant *Tetraoponera aethiops* (Smith) on its host plant *Barteria fistulosa***
J. B. Mikissa, K. Jeffery, D. Fresneau*, J. L. Mercier
- 2-14 ***Myrmica rubra* in Canada: nest density and relative abundance and their relationship to soil structure at an urban park**
Kristi Rudmik*, Gail S. Fraser
- 2-15 **Rapid predation of Japanese myrmecophagous jumping spider *Siler vittatus* against the Argentine ant *Linepithema humile***
Hironori Sakamoto*, Yuki Baba, Eiriki Sunamura, Shun Suzuki, Seigo Higashi
- 2-16 **Predicting the outcome of combats between the invasive *L. neglectus* and native ant species: who is the winner?**
Giacomo Santini*, Filippo Frizzi, Mark Briffa, Giulia Brunetti, Guido Chelazzi
- 2-17 **Local scale population genetics of pharaoh ants in Central- and Southern Thailand**
Anna M. Schmidt*, Watana Sakchoowong, Jes S. Pedersen
- 2-18 **Comparison of colony breeding structure in native and introduced populations of two invasive subterranean termites**
Edward L. Vargo*, Claudia Husseneder, Anne-Geneviève Bagnères, Kenneth Grace, Mo Jianchu, Elfie Perdereau, Dawn Simms
- 2-19 **Climate and its effect on the invasion of *P. dominulus* to North America**
Susan A Weiner*, Katherine Noble, Galen Flynn, Charles T. Upton, William A Woods, Philip Starks

- 2-20 Spreading of infestation of the invasive dry-wood termite *Incisitermes minor* in Japan - Japanese perspectives**
Tsuyoshi Yoshimura*, Shuji Itakura, Wakako Ohmura, Yoshiyuki Yanase, Takuro Mori
- 3-1 Application of ant species distribution data to conservation efforts in Papua New Guinea and Fiji**
Leeanne E. Alonso*, Andrea Lucky, Eli Sarnat, Evan P. Economo
- 3-2 From micro-landscape to landscape: a study of ant distribution in two Pyrenean valleys**
Abel Bernadou*, Hugues Barcet, Maud Combe, Xavier Espadaler, Vincent Fourcassié
- 3-3 Analysis of ant community structure in urban green areas of Parma (Italy)**
Cristina Castracani*, Fiorenza Spotti, Donato A. Grasso, Alessandra Mori
- 3-4 Termite diversity and abundance across habitat variability in a tropical moist savanna (Lamto, Côte d'Ivoire)**
Kanvaly Dosso*, Souleymane Konaté, Daouda Aïdara, Karl E. Linsenmair
- 3-5 Assemblages of ants along altitudinal gradients in the Brazilian Atlantic Forest**
Flavia Esteves*, Carlos R.F. Brandão
- 3-6 Thirty years' trends in ant colony density in sandy grassland**
László Gallé, Orsolya Kanizsai*
- 3-7 Ant assemblages at flood plains: Regional-scale convergence, artifact, or only random patterns?**
László Gallé*, Zhanna Reznikova, Bálint Markó
- 3-8 Where are the last geographic frontiers for ant new discoveries?**
Benoit Guenard*, Michael D. Weiser, Robert R. Dunn
- 3-9 Rapid assessment protocol for surveying dominant arboreal-nesting ant distribution in tropical forests**
Maurice Leponce*, Alain Dejean
- 3-10 Comparative phylogeography of the ants *Myrmica rubra* and *M. ruginodis***
Jenni Leppänen*, Hannele Anthoni, Kari Vepsäläinen, Riitta Savolainen
- 3-11 Assessing determinism in the assembly of ant communities using phylogenies and climatic gradients**
Jean-Philippe Lessard*, Michael K. Borregaard, Mike Weiser, Rob Dunn, Nathan Sanders, Carsten Rahbek
- 3-12 Is there an ant mosaic in the high canopy of lowland dipterocarp rainforest?**
Kalsum M. Yusah*, William A. Foster
- 3-13 Ants and plants on old-fields in Romania: differences in successional pathways**
Enikő Németh*, Bálint Markó, Eszter Ruprecht
- 3-14 Determinants of ant community composition along a 1200 km latitudinal gradient in arid and semi-arid regions of Iran**
Omid Paknia*, Martin Pfeiffer
- 3-15 Analysis of Italian ant-fauna community structure as a tool for the assessment of environmental quality**
Fiorenza Spotti*, Cristina Castracani, Donato A. Grasso, Alberto Fanfani, Alessandra Mori
- 3-16 Assessment of ant alpha and beta diversity with reduced sampling effort**
Melanie Tista*, Konrad Fiedler
- 4-1 Behavioral complexity and chemical ecology in ant-termite interactions**
F. Dardeau, M. Labédan, J.-L. Mercier, A.-G. Bagnères*
- 4-2 How important is the ant-termite interaction in tropical rain forests?**
Tom M. Faule*, Olivia I. Scholtz, Paul Eggleton

- 4-3 Invasive ants, mealybugs and coccidophagous beetles: a case study on ornamental plants with ecological implications**
Donato A. Grasso*, Mauro Sacco, Cristina Castracani, Gerardo Palla, Alessandra Mori
- 4-4 Do biodiversity of ant-mimic spiders associate with ant biodiversity?**
Yoshiaki Hashimoto*, Tomoji Endo, Takao Itioka
- 4-5 Evolution of chemical signalling in lycaenid-ant associations**
Masaru K. Hojo*, Ari Yamamoto, Toshiharu Akino, Ryohei Yamaoka
- 4-6 Nutrient limitation in an Andean brown food web: effects of C, N, P additions on leaf-litter ants and mesofauna**
Justine Jacquemin*, Mark Maraun, Yves Roisin, Maurice Leponce
- 4-7 Linking biological diversity and chemical diversity: resin collection in a tropical stingless bee community**
Sara Leonhardt*, Thomas Schmitt, Nico Blüthgen
- 4-8 Saltatory *Apis cerana* swarms elude hornets in northern Thailand**
W.S. Robinson
- 4-9 Spatial variation in tri-trophic interactions: ants determine host plant use by lepidopteran larvae**
Sebastian Sendoya*, André V. L. Freitas, Paulo S. Oliveira
- 4-10 Dispersal abilities of a social parasite of *Myrmica* ants**
Line V. Ugelvig*, David R. Nash
- 4-11 Testing for cheater behaviour in an ant-aphid mutualism**
Amélie Vantaux*, Tom Wenseleers
- 5-1 Why are flagellate – termite associations evolutionary unstable?**
Sylvain Guyot, Lise Genty, Franck Dedeine*
- 5-2 How subterranean termites (Isoptera: Rhinotermitidae) behave when they find consecutive food sources?**
Juliana Toledo Lima*, Ana Maria Costa-Leonardo
- 5-3 Similarities in midgut cellulolytic environment between a higher termite and a lower termite**
Gaku Tokuda*, Ai Fujita, Hiromi Makiya, Masaru Hojo, Hirofumi Watanabe
- 6-1 Benefits of helping in the primitively eusocial halictid bee *Halictus scabiosae***
Nayuta Brand*, Michel Chapuisat
- 6-2 Social evolution and relatedness in a sphecid wasp**
Manuela Giovanetti*, Robert J. Paxton
- 6-3 Evolutionary flexibility of social organisation in an ant**
Robert L. Hammond*, Richard J. Gill
- 6-4 Social wasp worker behavior is not based on relatedness, but eusociality requires it**
James H. Hunt
- 6-5 Entrapped Ants Elicit Precise Rescue Behaviour from Relatives**
Elise Nowbahari*, Karen L. Hollis
- 6-6 Queen fecundity as a function of worker attention in polygynous *Formica fusca***
Martina Ozan*, Heikki Helanterä, Patrizia d'Ettorre, Liselotte Sundström
- 6-7 Does relatedness matter at the brink of sociality?**
Miriam H. Richards*, Marianne Peso, Chris Course
- 6-8 Cannibalism and conflict in the ant *Formica aquilonia***
Eva Schultner*, Heikki Helanterä

- 6-9 Indications for cooperative breeding in *Coccotrypes dactyliperda* (Coleoptera, Scolytidae)**
Gal Sitkov-Sharon, Amos Bouskila, Ally R. Harari*
- 6-10 The mating system and colony composition of the eusocial beetle *Austroplatypus incompertus***
Shannon Smith*, Andrew Beattie, Debbie Kent, Adam Stow
- 6-11 What does it mean to be more than the sum of your parts and how does this affect the evolution of sociality?**
David Sumpter
- 6-12 Worker reproduction after colony fission in honeybees**
Michal Woyciechowski*, Karolina Kuszewska, Zahra Ayoub
- 7-1 Mechanisms of genetically biased caste determination in a fire ant hybrid zone**
Heather Axen*, Laurent Keller, Sara Helms Cahan
- 7-2 The consequences of polyandry for worker caste determination in army ant colonies**
M. Benjamin Barth*, F. Bernhard Kraus, Robin F. A. Moritz
- 7-3 Male external genitalia of the ant genus *Cardiocondyla***
Christine Beißwenger*, Jürgen Heinze
- 7-4 Post-copulatory sexual selection in social Hymenoptera**
Susanne P.A. den Boer*, Boris Baer, Jacobus J. Boomsma
- 7-5 Reproductive competition among worker patriline in the thelytokous ant *Cataglyphis cursor***
Claudie Doums*, Blandine Chéron, Pierre Fédérici, Thibaut Monnin
- 7-6 Expression profile of sex-determining genes in embryonic and larval development of *Apis mellifera***
Flávia Cristina de Paula Freitas*, Francis de Moraes Franco Nunes, Alexandre dos Santos Cristino, Zilá Luz Paulino Simoes
- 7-7 Male competition in the ant genus *Cardiocondyla***
Sabine Frohschammer*, Jürgen Heinze
- 7-8 Inconspicuous matured males of *Reticulitermes speratus* participate in reproduction in orphaned colonies**
Ai Fujita*, Hirofumi Watanabe
- 7-9 One day stand: the revealing story behind honeybee males and their sperm**
Rodolfo Jaffé*, Boris Baer, Leigh W. Simmons
- 7-10 Caste production in orphaned incipient colonies of *Reticulitermes*: its relation to genetic system and parthenogenesis**
Osamu Kitade*, Hiromi Kanda
- 7-11 The genetics of thelytokous parthenogenesis in the ant *Cerapachys biroi***
Daniel Kronauer
- 7-12 What maintains differentiation between male and female genomes in hybrid wood ants?**
Jonna Kulmuni
- 7-13 Alternative reproductive tactics and sex allocation in the ant *Hypoponera opacior***
Ilka Kureck*, Susanne Foitzik, Dirk Metzler, Markus Rüger
- 7-14 Comparative analysis and evolution of unusual mating systems in the ant genus *Cataglyphis***
Laurianne Leniaud*, Hugo Darras, Serge Aron
- 7-15 Microgynes in the reproductive strategy of *Ectatomma ruidum***
Jean-Christophe Lenoir *, Alejandro Nettel Hernanz, Jean-Paul Lachaud, Dominique Fresneau, Chantal Poteaux-Léonard

- 7-16 **Caste differentiation in female-female colonies of the termite *Reticulitermes speratus* (Rhinotermitidae)**
Kiyoto Maekawa*, Miho Yoshimura, Keisuke Shimada, Dai Watanabe, Ryota Saiki
- 7-17 **Inbreeding avoidance in drone congregations of a stingless bee (*Scaptotrigona mexicana*)**
Matthias Y. Mueller*, F. Bernhard Kraus, Robin F.A. Moritz
- 7-18 **Female-male conflict in the clonal ant *Vollenhovia emeryi***
Kyohsuke Ohkawara*, Misato Okamoto, Kazuya Kobayashi, Eisuke Hasegawa
- 7-19 **Egg production and caste allocation in the clonally reproductive ant *Vollenhovia emeryi***
Misato Okamoto*, Ohkawara Kyohsuke
- 7-20 **The evolution of asexuality in fungus-growing ants**
Christian Rabeling
- 7-21 **Phylogeography of the parthenogenic ant, *Platythyrea punctata*: highly successful colonization of the West Indies**
Jon Seal*, Katrin Kellner, Juergen Heinze
- 7-22 **Multiple queens, multiple paternity and genetic diversity in the ant genus *Plagiolepis***
Nicolas Thurin*, Serge Aron
Socially parasitic reproductive strategies in stingless bees
Tom Wenseleers*, Denise A. Alves, Tiago M. Franco, Johan Billen, Vera Imperatriz-Fonseca
- 8-1 **Social parasitism and egg recognition in *Formica* ants**
Anton Chernenko*, Heikki Helanterä, Liselotte Sundström
- 8-2 **Violent fights and facial patterns in the host colony takeover by the cuckoo wasp *Polistes sulcifer***
Alessandro Cini*, Irene Ortolani, Claudia Bruschini, Lisa Poggi, Rita Cervo
- 8-3 **Is there specialisation in policing in the honeybee *Apis mellifera*?**
Uli Ernst*, Dries Cardoen, Francis Ratnieks, Dirk de Graaf, Liliane Schoofs, Peter Verleyen, Tom Wenseleers
- 8-4 **Are caterpillars of the social parasite *Maculinea alcon* capable of changing their host's chemical profile?**
Matthias A. Fürst*, David R. Nash
- 8-5 **Effects of host social structure and host predisposition to parasitic eggs on social parasitism in *Formica fusca***
Lea Heikkinen*, Heikki Helanterä
- 8-6 **Worker reproductive parasitism in social bees**
Michael J. Holmes*, Benjamin P. Oldroyd, Madeleine Beekman
- 8-7 **Induced anti-social parasite defense in host ant colonies**
Tobias Pamminer*, Inon Scharf, Pleuni Pennings, Susanne Foitzik
- 8-8 **Giant *Dinoponera* and tiny *Pheidole*: a kind of inquilinism?**
Patricia Romano da Silva*, Fábio S. Nascimento, José O. Dantas
- 8-9 **Zooming in on the mimicry strategies of the socially parasitic butterfly *Maculinea alcon***
András Tartally*, Matthias Fürst, Patrizia d'Ettorre, David R. Nash
- 8-10 **Phylogenetic perspective of alternative modes of social parasitism in North American *Lasius (Acanthomyops)* ants**
Joseph M. Raczkowski, John W. Wenzel*
- 9-1 **Unraveling the functional significance of multiple *Wolbachia* infections in workers of *Acromyrmex leafcutter* ants**
Sandra B. Andersen*, Mette Boye, Jacobus J. Boomsma
- 9-2 **Substrate Preparation Behaviors for Cultivation of Symbiotic Fungus in Attine Ants**
Eduardo Arrivabene Diniz*, Odair Correa Bueno, Amanda Aparecida Carlos

- 9-3 **Assessment of yeasts associated with waste material of *Atta sexdens rubropilosa* (Hym. Formicidae) laboratory colonies**
Mara F. Chiarelli*, Sandra S. Verza, André Rodrigues, Odair C. Bueno, Fernando C. Pagnocca, Joaquim Martins Jr
- 9-4 **Laccase gene expression as a possible key adaptation for herbivorous niche expansion in the attine fungus-growing ants**
Henrik H. De Fine Licht*, Morten Schiøtt, Sanne Nygaard, Jacobus J. Boomsma
- 9-5 **Ecotymbionts and immunocompetence in the leaf-cutting ant *Acromyrmex subterraneus subterraneus* Forel, 1893**
Danival de Souza*, Myriam M. R. Ribeiro, Aline Mello, Maria C. M. Kasuya, Terezinha M. C. Della Lucia
- 9-6 **Low diversity and high specificity of bacterial communities in the bumble bee gut**
Hauke Koch*, Paul Schmid-Hempel
- 9-7 **Yeasts isolated from field nests of *Acromyrmex heyeri* (Hymenoptera: Formicidae) from Argentina**
Virginia Elena Masiulionis*, André Rodrigues, Fernando Carlos Pagnocca
- 9-8 **A population-level study of ant-fungal cultivar coevolution in the *Cyphomyrmex wheeleri* group**
Natasha J. Mehdiabadi*, Ulrich G. Mueller, Seán G. Brady, Ted R. Schultz
- 9-9 **Stingless bees and fungi: are they a specialized food for *Scaptotrigona* (Apidae, Meliponini) larvae?**
Cristiano Menezes *, Vera L. Imperatriz-Fonseca
- 9-10 **Exploring potentially novel symbioses between fungus-growing termites and ligno-cellulose degrading bacteria**
Michael Poulsen*, Garret Suen, Sandye M. Adams, Duur K. Aanen, Wilhelm de Beer, Susannah G. Tringe, Kerrie Barry, Lynne A. Goodwin, Cameron R. Currie
- 9-11 **A survey of *Escovopsis* sp. associated with Brazilian fungus-growing ants (Hymenoptera: Formicidae)**
Andre Rodrigues*, Scott E. Solomon, Caue T. Lopes, Mauricio Bacci Jr., Heraldo L. Vasconcelos, Fernando C. Pagnocca
- 9-12 **Did fungus gardens of leafcutter ants evolve pectinases analogous to those in phytopathogens to attack live plant cells?**
Morten Schiøtt*, Adelina Rogowska-Wrzesinska, Peter Roepstorff, Jacobus J. Boomsma
- 9-13 **The Leaf cutter ant *Atta texana* (Attini, Formicidae) chooses to construct chimaeric gardens by fungal intercropping**
Ruchira Sen*, Heather D. Ishak, Trevor R. Kniffin, Ulrich G. Mueller
- 9-14 **New perspective on the relationship between termites and symbionts: reproductives lose symbionts after colony maturation**
Keisuke Shimada*, Kiyoto Maekawa
- 9-15 **Succession of filamentous fungi in the waste material of *Acromyrmex balzani* (Hymenoptera: Formicidae)**
Sandra S. Verza*, André Rodrigues, Mara F. Chiarelli, Odair C. Bueno, Fernando C. Pagnocca
- 10-1 **Pleometrosis is not the answer**
Tamara R. Hartke*, Rebeca B. Rosengaus
- 10-2 **The evolution of kin recognition: production, detection, and action components**
David C. Queller*, Sean Liao, Joan E. Strassmann
- 10-3 **Colony structure of *Kaloterme flavicollis* (Isoptera, Kalotermitidae): preliminary results from two molecular markers**
Alessandro Velonà*, Andrea Luchetti, Barbara Mantovani
- 11-1 **Split sex ratios due to queen replacement and the evolution of eusociality**
Joao Alpedrinha*, Andy Gardner, Stuart West

- 11-2 Study of hybrid zones in the *Trigona carbonaria* complex (Hymenoptera, Apidae, Meliponini) through molecular tools**
Rute M. Brito*, Flavio O. Francisco, Julianne Lim, Benjamin P. Oldroyd
- 11-3 Reproductive conflicts in the ponerine ant, *Pachycondyla verenae***
Sophie Evison*, Ronara de Souza Ferreira, Patrizia d'Ettore, Dominique Fresneau, Chantal Poteaux-Léonard
- 11-4 Opportunity for direct reproduction: do workers prepare for queenless conditions?**
Lucy A. Friend*, Andrew F.G. Bourke
- 11-5 Worker policing of queen reproduction**
Richard Gill*, Rob Hammond
- 11-6 Genetic structure of a drone congregation area of *Tetragonisca angustula* (Apidae, Meliponini) in São Paulo city, Brazil**
Paulo Henrique Pereira Gonçalves, Leandro Rodrigues Santiago, Gustavo Valadares Barroso, Elaine Aparecida Françoso, Flavio de Oliveira Francisco, Maria Cristina Arias*
- 11-7 Genetic and phenotypic divergence in *Apis mellifera* populations from high and low altitude regions of the Kenya mountain**
Karl Gruber Gonzalez*, Caspar Schöning, Martin Hasselmann
- 11-8 Killing the wrong kind of eggs: the cost of worker policing**
Martin H. Kärcher*, Francis L. W. Ratnieks
- 11-9 Gene flow across the solitary-social transition in the socially polymorphic sweat bee *Halictus rubicundus***
Antonella Soro, Jeremy Field, Cathy Bridge, Robert J. Paxton*
- 11-10 Colony structure in three species of the ant genus *Myrmecia***
Zeng-Qiang Qian*, Simon K. A. Robson, Ellen A. Schlüns, Helge Schlüns, Birgit C. Schlick-Steiner, Florian M. Steiner, Ross H. Crozier
- 11-11 As an ant flies: sex-biased dispersal and inbreeding in the ant *Formica exsecta***
Emma Vitikainen*, Cathy Haag-Liautard, Liselotte Sundström
- 11-12 Temporal dynamics of the male effective population size in bumblebees (Hymenoptera: Apidae)**
Stephan Wolf*, Theresa Toev, Ruby L.V. Moritz, Robin F.A. Moritz
- 12-1 Phylogeography of the Weaver ant *Oecophylla smaragdina* supporting southern Indian refugia hypothesis**
Yukiko Asaka*, Noriko Azuma, K. Praveen Karanth, Kazuo Ogata, Takahiro Murakami, Seigo Higashi
- 12-2 Origin, diversification and molecular systematics of the leaf-cutting ant *Atta sexdens***
Joaquim Martins Junior, Scott Evan Solomon, Ulrich Gerhard Mueller, Mauricio Bacci Júnior*
- 12-3 Systematics and evolution of Mesoamerican *Stenammas*: A new perspective on a temperate ant genus**
Michael G. Branstetter
- 12-4 Investigating the phylogenetic significance of melanism in *Bombus muscorum* L**
James C. Carolan*, Aislinn Deenihan, John Breen, Jeffrey J.M. Pereboom, Carlos Lopez-Vaamonde, Ben Darvill, Dave Goulson, Andrew F.G. Bourke, Mark J.F. Brown
- 12-5 Taxonomy and Phylogeny of the ant Subfamily Heteroponerinae**
Rodrigo Machado Feitosa*, Carlos Roberto Ferreira Brandão
- 12-6 Molecular phylogeny of fire ants: Implications for the evolution of social organization and worker polymorphism**
Dietrich Gotzek
- 12-7 The basal group of the genus *Crematogaster* from morphological evidence (Hymenoptera: Formicidae)**
Shingo Hosoishi*, Kazuo Ogata

- 12-8 Biogeography and diversification of the Pacific ant genus *Lordomyrma* Emery**
Andrea Lucky*, Eli M. Sarnat
- 12-9 Patterns of diversification in the neotropical ant genus *Cephalotes***
Shauna L. Price*, Daniel J. C. Kronauer, Lucy A. P. Tran, Robert K. Wayne, Scott Powell
- 12-10 Taxonomic revision of the African driver ants**
Caspar Schöning*, Daniel J.C. Kronauer, William H. Gotwald Jr., Jacobus J. Boomsma, Lars Vilhelmsen
- 12-11 Phylogenetic analyses of early evolutionary transitions in fungus-farming ants**
Jeffrey Sosa-Calvo*, Ted R. Schultz, C. Roberto F. Brandão, Cauê T. Lopes, Herald L. Vasconcelos
- 12-12 Australian *Monomorium* ants: morphological plasticity or unfathomable diversity?**
Kathryn S. Sparks*, Andrew D. Austin, Alan N. Andersen, Steve O. Shattuck, Stephen C. Donnellan
- 12-13 The early evolution of the socially parasitic ant genus *Myrmoxenus*: Reconstruction of the phylogenetic tree**
Masaki Suefuji
- 12-14 Taxonomy and distribution of the genus *Apis***
Siriwat Wongsiri
- 12-15 Male-based revision of Malagasy ants**
Masashi Yoshimura
- 13-1 Early olfactory experience modifies neural activity in the antennal lobe of a social insect at the adult stage**
A. Arenas*, M. Giurfa, W. M. Farina, J.C. Sandoz
- 13-2 Effect of slave ratio on the survival probability of the slave-maker amazon ant *Polyergus rufescens* Latr**
Bálint Markó*, Zsófia Szöke, Katalin Erős
- 13-3 Differences in male accessory gland proteins of the ant species *Cardiocondyla obscurior***
Marion Fuessl*, Jürgen Heinze, Alexandra Schrempf
- 13-4 Moribund ants may cease to avoid illuminated zones**
J. Korczynska*, E. J. Godzinska
- 13-5 Demography of social insects; understanding the evolution of aging phenotypes**
Boris Kramer*, Tanja Miethe
- 13-6 Maintaining the brain's functional integrity in long-lived honey bees - possible candidates**
Daniel Münch*, Claus D. Kreibich, Gro V. Amdam
- 13-7 Gene expression of mated, sham-mated and virgin *Cardiocondyla obscurior* queens**
Jan Oettler*, John Wang
- 13-8 Can the honey bee guide insights into age-associated functional decline?**
Brenda Rascón*, Basil Hubbard, David Sinclair, Gro V. Amdam
- 13-9 Remaining lifespan determines division of labour in social insects**
Adam Tofilski
- 13-10 Altruistic colony defense by post-reproductive females in a social aphid**
Keigo Uematsu*, Mayako Kutsukake, Takema Fukatsu, Masakazu Shimada, Harunobu Shibao
- 13-11 Production of Free Oxygen Radicals and Ageing in the Ant *Formica exsecta***
Ulla Vattulainen*, Kalevi Trontti, Liselotte Sundström
- 14-1 Regulation of the vitellogenin synthesis by juvenile hormone in *Ectatomma tuberculatum* (Formicidae: Ectatomminae)**
Dihego Oliveira Azevedo, Jacques H. C. Delabie, Riviane R. da Hora, José Eduardo Serrão*

- 14-2 Beyond the muscle mass: the role of mandibular morphology for different cutting forces in grass- and leaf-cutting ants**
Martin Bollazzi*, Flavio Roces, Luiz Forti, Claudia Rodriguez
- 14-3 Nutritionally-driven differential expression of *UBX* gene is associated leg diphenism in *Apis mellifera* castes**
Ana Durvalina Bomtorin*, Angel Roberto Barchuk, Livia Moda, Marcela Ap. F. B. Laure, Alexandre dos Santos Cristino, Michelle P. M. Soares, Rodrigo A. Faccioli, Marcia M. G. Bitondi, Zila L.P. Simoes
- 14-4 Morphological organization of the dorsal protuberance of *Linepithema humile* (Mayr) ant's larvae (Hymenoptera: Formicidae)**
Maria Izabel Camargo Mathias*, Odair Correa Bueno, Gabriela Ortiz
- 14-5 Tergal glands in nasute mandibulate soldiers of Neotropical termites (Isoptera, Termitidae, Syntermitinae)**
Ana Maria Costa-Leonardo*, Ives Haifig, Lara Teixeira Laranjo
- 14-6 The hows and whys of size variation in worker bumble bees (*Bombus impatiens*)**
Margaret J. Couvillon*, Anna Dornhaus
- 14-7 Mandibular gland from workers of *Melipona quadrifasciata* Lep. as a possible source for cuticular hydrocarbons**
Carminda da Cruz-Landim*, Maria Juliana Caliman-Ferreira, Ronaldo Zucchi
- 14-8 Ergonomics of load transport in the mediterranean seed harvesting ant *Messor barbarus***
Vincent Fourcassié *, Abel Bernadou
- 14-9 Functional significance of and genetic mechanisms underlying extreme worker size polymorphism in *Pheidole* ants**
Ming Hua Huang*, Else Fjerdingstad, Diana E. Wheeler
- 14-10 Structure and composition of trap-jaw ant mandibles**
Fredrick J Larabee*, Andrew V Suarez
- 14-11 Morphometric study of intercastes in the ant *Temnothorax nylanderi*: variability of queen-worker mosaics**
Yasukazu Okada*, Luc Plateaux, Christian Peeters
- 14-12 New statistical methods for the study of morphological evolution in the ant worker caste**
Marcio R. Pie*, Marcel K. Tschá, Stela A. Soares
- 14-13 The influence of season and larval competition on caste fate in a fission-performing ant**
Camille Ruel*, Xim Cerdá, Raphaël Boulay
- 14-14 Evolution of nesting habitats and metapleural glands in ants**
Ellen A Schlüns*, Simon KA Robson, Andrew D Austin, Ross H Crozier
- 14-15 Behavioural regulation of monogyny among ergatoid queens in *Eutetramorium mocquerysi*, an ant from Madagascar**
Alexandra Sébastien *, Brian Fisher, Christian Peeters
- 14-16 Explosive behaviour in workers of the snapping termite *Neocapritermes taracua*: Is there anything ordinary?**
Jan Šobotník*, Robert Hanus, Jana Pytelková, Michael Mareš, Josef Cvačka, Jana Krasulová, Yves Roisin, Thomas Bourguignon
- 14-17 On the male larvae of *Camponotus rufipes* Fabricius (Hymenoptera: Formicidae)**
Daniel Russ Solis*, Eduardo Gonçalves Paterson Fox, Mônica Lanzoni Rossi, Odair Correa Bueno
- 14-18 Caste morphometrics and wing loading in *Dolichovespula maculata* (Hymenoptera: Vespidae)**
Christopher K. Starr*, Robert S. Jacoson, Joan W. Krispyn

- 14-19 Expression and functional analyses of *Distal-less* responsible for soldier-specific morphogenesis in nasute termites**
Kouhei Toga*, Masaru Hojo, Toru Miura, Kiyoto Maekawa
- 15-1 Selective death among female brood of the fire ant *Solenopsis invicta*?**
S  verine D. Buechel*, Yannick Wurm, Laurent Keller
- 15-2 Age- and behavioural-specific expression of vitellogenin genes in the fire ant *Solenopsis invicta***
Susana Figueredo Pinto, Miguel Corona Villegas*, Laurent Keller
- 15-3 Hind leg development in honey bee, *Apis mellifera*, larvae**
Carolina Gonalves Santos*, Klaus Hartfelder
- 15-4 The epigenetics of honey bee defensive behavior**
Christine Emore, Miguel E. Arechavaleta-Velasco, Carlos Robles-Rios, Greg J. Hunt*
- 15-5 Sociogenomics of the ant circadian clock**
Krista Ingram*, Rudolf Meier, Guy Bloch, Yannick Wurm
- 15-6 RNA interference in the termite *Reticulitermes speratus*: silencing of the hexamerin gene using a single 21 nt siRNA**
Shuji Itakura*, Yumiko Nambu, Hiromi Tanaka, Akio Enoki
- 15-7 Alternate splicing of CP2 transcription factor homologue correlates with reproductive dominance in honeybees**
Antje Jarosch*, Robin F.A. Moritz
- 15-8 The genetic architecture of pheromone response and ovariole number in worker honey bees**
Sarah D. Kocher*, Greg J. Hunt, Miguel Arechavaleta-Velasco, Christina M. Grozinger
- 15-9 Gene expression analysis in different developmental stages of the Asian subterranean termite *Coptotermes gestroi***
Fl  via Costa Leonardo*, Ana Maria Costa-Leonardo, Fernando Ferreira Costa, Gonalo A. G. Pereira
- 15-10 Characterization of two honeybee genes potentially involved in hexamerin sequestration during metamorphosis**
Guaracini Aparecida Loterio*, Juliana Ramos Martins, M  rcia Maria Gentile Bitondi
- 15-11 How ants switch jobs - Role of the *foraging* gene**
Christophe Lucas*, Michael Nicolas, Laurent Keller, Marla B Sokolowski
- 15-12 Genomic analyses of social organization and viral infection in fire ants**
Fabio Manfredini*, David DeWayne Shoemaker, John Wang, Yannick Wurm, Laurent Keller, Christina Maria Grozinger
- 15-13 Am-fru, a gene of the sex determining cascade of the honeybee, is sex-specifically expressed in the male pupal brain**
Miriam Mueller*, Martin Beye
- 15-14 Unraveling the pleiotropy effects behind the green beard**
Mingkwon Nipitwattanaphon*, John Wang, Laurent Keller
- 15-15 The four hexamerin genes in the honey bee: structure, molecular evolution and function deduced from expression patterns**
Juliana Ramos Martins*, Francis de Morais Franco Nunes, Alexandre Santos Cristino, Zil   Luz Paulino Sim  es, M  rcia Maria Gentile Bitondi
- 15-16 Annotated transcriptome and draft genome assembly for the Argentine Ant, *Linepithema humile***
Christopher D. Smith*, Neil D. Tsutsui

- 15-17 Age and task dependent *foraging* gene expression in the bumblebee *Bombus terrestris***
Julie Tobback*, Veerle Mommaerts, Hans Peter Vandersmissen, Guy Smagghe, Roger Huybrechts
- 15-18 Role-dependent change in the structure and function of the hypopharyngeal glands in worker honeybees (*Apis mellifera* L.)**
Takayuki Ueno*, Takayoshi Nakaoka, Takeuchi Hideaki, Takeo Kubo
- 15-19 Building a genetic map for *Solenopsis invicta* by sequencing restriction-site associated DNA (RAD) markers**
John Wang*, Yannick Wurm, Mingkwan Nipitwattanaphon, Laurent Keller
- 15-20 Selection for a preference in food collection is associated with proteomic and epigenetic alterations in honeybees**
Florian Wolschin*, Brian Herb, Gro V Amdam, Andrew F Feinberg
- 15-21 The genetic architecture of a trait underlying social conflict**
Yannick Wurm*, John Wang, Mingkwan Nipitwattanaphon, Oksana Riba-Grognuz, D DeWayne Shoemaker, Laurent Keller
- 16-1 Testing genetic hypotheses of reproductive regulation in honey bees**
Alanna Backx*, Graham J Thompson
- 16-2 Genes for maternal effects: short-term associations between the queen's transcriptome and her offspring's caste fate**
Michiel Dijkstra*, Laurent Keller
- 16-3 Breakthrough of sequencing technology facilitates research on social insects**
Guojie Zhang
- 16-4 Understanding fire ant venoms by proteomics: *Solenopsis invicta* Buren vs *Solenopsis saevissima* Smith**
Eduardo Gonçalves Paterson Fox*, Lucilene Delazari dos Santos, Jose Roberto Aparecido dos Santos Pinto, Daniel Russ Solis, Ednildo de Alcântara Machado, Anally Ribeiro da Silva Menegasso, Odair Correa Bueno, Mário Sérgio Palma
- 16-5 (Un)limited variability? Evolution of sex determining alleles in honey bees**
Sarah Lechner*, Martin Hasselmann
- 16-6 Exploring the molecular processes underlying female caste development in the honey bee**
Rosannah C. McCartney*, Peter K. Dearden
- 16-7 The hidden cost of altruistic policing**
Claire L. Narraway*, Peter Nonacs
- 16-8 Gene networks linked to vitellogenin mRNA disruption**
Francis M. F. Nunes*, Angel R. Barchuk, Ana D. Bomtorin, Alexandre S. Cristino, Zilá L. P. Simões
- 16-9 The mitochondrial genome of *Acromyrmex echinator***
Sanne Nygaard*, Morten Schiøtt, Morten Rasmussen, Jacobus J Boomsma
- 16-10 Importance of the major royal jelly protein in the evolution of sociality**
Solenn Patalano*, Stefan Albert, Seirian Sumner
- 16-11 The injection of in vitro synthesized mRNA as a method for transient gene expression in the honeybee**
Björn Schmitt*, Marianne Otte, Inga Nissen, Martin Beye
- 16-12 The expression of different set of genes characterizes the pupal and adult cuticle development in *Apis mellifera***
Michelle Prioli Miranda Soares*, Angel Roberto Barchuk, Rodrigo Antonio Faccioli, Ana Durvalina Bomtorin, Zilá Luz Paulino Simões, Márcia Maria Gentile Bitondi

- 16-13 A second generation genetic map of the bumblebee, *Bombus terrestris***
Eckart Stolle*, Lena Wilfert, Regula Schmid-Hempel, Paul Schmid-Hempel, Richard Reinhardt, Michael Kube, Robin F.A. Moritz
- 16-14 Transcriptome analysis of phenotypic plasticity in a tropical paper wasp**
Seirian Sumner*, Solenn Patalano, David Gonzales, Pedro Ferreira, Roderic Guigo
- 16-15 Genomic approaches to understanding karyotype evolution in the *Myrmecia pilosula* species complex in Australia**
Owain R. Edwards*, Simon K. A. Robson, James M. Cook, Boris Baer, Robert W. Taylor
- 17-1 Successful maintenance of a stingless bee population despite a severe genetic bottleneck**
Denise de Araujo Alves*, Vera Lucia Imperatriz-Fonseca, Johan Billen, Tom Wenseleers
- 17-2 Antibacterial activity by *Apis florea* and *A. andreniformis* honey**
Chanpen Chanchao*, Pawornrat Nonthapa, Jirattikarn Kaewmuangmoon
- 17-3 Ant (Hymenoptera: Formicidae) community differences associated with organic, no-till, and chisel-till cropping systems**
Daniel Kjar*, Katalin Szlavecz, Michel Cavigelli, Jessica Phillips, Conner Scace
- 17-4 Impacts of land use types on ant communities in a tropical forest margin (Oumé - Côte d'Ivoire)**
Kolo Yeo*, Souleymane Konate, Seydou Tiho, Simon K. Camara
- 17-5 Maximum challenge bioassay of the pathogenicity of EPF strains to *Lasius niger* (Hym.: Formicidae) workers and larvae**
Csaba Nagy*, Jerry V. Cross, David Chandler, Gillian Prince, Adrian L. Harris, Viktor Marko
- 17-6 Novel Low-Budget Method for Observing Honeybee Behaviour in Temperature Fields**
Ronald Thenius*, Gerald Radspieler, Thomas Schmickl, Karl Crailsheim
- 18-1 Stability and Variability of the Food-flow inside the nest according to starvation**
Aurélie Buffin*, Serge Goldman, Jean Louis Deneubourg
- 18-2 Social insects as models for biomimetic design**
Rebecca M. Clark, Adam G. Dolezal*, C. Tate Holbrook, Dani Moore, Rick P. Overson, Clint A. Penick, Adrian A. Smith
- 18-3 Honeybee nest-site selection as an optimisation process**
Konrad Diwold*, Madeleine Beekman, Martin Middendorf
- 18-4 Evolution of self-organized division of labor**
Ana Duarte*, Ido Pen, Laurent Keller, Franz J. Weissing
- 18-5 Pheromone communication system of swarm robots inspired by ant trail foraging**
Ryusuke Fujisawa*, Shigeto Dobata, Fumitoshi Matsuno
- 18-6 Honeybee foragers increase the use of waggle dance information when using private information becomes unrewarding**
Christoph Grüter*, Francis L. W. Ratnieks
- 18-7 Collective decision making in honeybees: Environmental attraction factors versus socially driven aggregation**
Sibylle Hahshold*, Martina Szopek, Gerald Radspieler, Ronald Thenius, Thomas Schmickl, Karl Crailsheim
- 18-8 Spatio-temporal characteristics of honeybee, *Apis cerana japonica*, in shimmering behavior**
Masahiro Hata*, Teijiro Isokawa, Hidetoshi Ikeno, Naotake Kamiura, Ayumu Saitoh, Nobuyuki Matsui
- 18-9 Finding home: Inbound searching behaviour in the Australian desert ant *Melophorus bagoti***
Patrick Schultheiss*, Ken Cheng

- 18-10 Cooperative thermotaxis of honeybees in a complex and dynamic thermal environment**
Martina Szopek*, Gerald Radspieler, Ronald Thenius, Thomas Schmickl, Karl Crailsheim
Personalities, bee-alities and banalities
Lars Chittka
- 19-1 Queen behavior in *Metapolybia sp.* (Hymenoptera: Vespidae) related to colony cycle**
Laura Chavarría Pizarro*, Fernando Barbosa Noll
- 19-2 Non-invasively observing social insect behaviour using diagnostic radioentomology**
Mark K Greco*, Marc O Schäfer, Vincent Dietemann, Jochen Pflugfelder
- 19-3 Context-dependent eavesdropping by a dominant stingless bee species**
Elinor M. Lichtenberg*, James C. Nieh
- 19-4 Biogeochemistry and the life histories of ant colonies**
Terrence McGlynn
- 19-5 Decisions and adaptations: sympatric congeneric Australian ants occupy discrete temporal niches**
Ajay Narendra, Sam Reid, Piyankarie Jayatilaka, Sarah Gourmaud, Birgit Greiner, Jan Hemmi, Willi Ribi, Jochen Zeil
- 19-6 No trade-off between learning speed & associative flexibility: a reversal learning test with multiple bumblebee colonies**
Nigel E. Raine*, Lars Chittka
- 19-7 Using metabolic scaling to examine how ant colonies work: the case of *Pheidole majors***
Jonathan Z. Shik
- 19-8 Queens or workers - who decides about reproductive dominance in the ant *Leptothorax acervorum*?**
Jürgen Trettin*, Monika Haubner, Jürgen Heinze
- 19-9 The Winner Takes It All, The Loser Standing Small: First Evidence of Winner and Loser Effects in a Eusocial Species**
Alok Bang*, Raghavendra Gadagkar
- 19-10 Activity pattern and metabolic cycle of a South American leaf-cutting ant, *Atta sexdens rubropilosa* (Formicidae)**
Amlan Das*, Pedro Leite Ribeiro, Carlos A. Navas
- 19-11 Behavioral syndromes on an individual and colony level in ants**
Susanne Foitzik*, Stephan Kühbandner, Andreas Modlmeier
- 19-12 Ultramorphology aspects of hairs and sensilla present in female wasps *Trypoxylon rogenhoferi* (Hymenoptera: Crabronidae)**
Rusleyd Maria Magalhães de Abreu*, Jonatas Chagas, Maria Izabel Camargo Mathias, Sandra Eloisi Denardi
- 19-13 Division of labour by division of risk**
Dawid Moroń*, Magdalena Lenda, Piotr Skórka, Michał Woyciechowski
- 19-14 "Personality" in bumblebees: individual consistency in response to novel colours**
Helene Muller*, Heiko Grossmann, Lars Chittka
- 19-15 Road to reproductive castes: factors affecting ovarian development in the primitively eusocial wasp *Ropalidia marginata***
Shantanu Shukla*, Swarnalatha Chandran, Ahmad Abdullah, Raghavendra Gadagkar
- 20-1 Spatial organization of workers of *Polistes dominulus* on the nest is not regulated by age**
David Baracchi*, Stefano Turillazzi
- 20-2 Honey bee population dynamics - finding the interactions between hive and landscape factors**
M. A. Becher*, V. Grimm, P. J. Kennedy, J. K. Pell, D. Chandler, P. Thorbek, J. L. Osborne

- 20-3 Ant colony phenology: the implications of endogenous versus exogenous regulation of seasonal cycles**
Sharon Bewick*, Katie Stuble, Rob Dunn, Nathan Sanders
- 20-4 Social organization of Poneromorph ant colonies: new insights from RFID and data mining**
Guénaél Cabanes*, Jerzy Witwinowski, Paul Devienne, Dominique Fresneau
- 20-5 Group-living and complex dynamics enhance individual resources discrimination**
Stephane Canonge*, Jean Louis Deneubourg, Gregory Sempo
- 20-6 Biomass relationships during colony development in the desert leafcutter ant *Acromyrmex versicolor***
Rebecca M. Clark*, Jennifer H. Fewell
- 20-7 Theoretical study of food recruitments in ants: a generalized model**
Bertrand Collignon*, Jean Louis Deneubourg, Claire Detrain
- 20-8 Communal nutrition in ants**
Audrey Dussutour*, Stephen J. Simpson
- 20-9 Within supercolony differences in aphid source sharing among nests in *Formica exsecta* Nyl. (Hymenoptera: Formicidae)**
Katalin Erős*, Csilla Gál, Enikő Csata, Zsolt Czekes, Anna-Mária Szász-Len, Zsófia Szőke, István Maák, Bálint Markó
- 20-10 Shifting from individual to collective behaviours in ants**
Renée Fénéron*, Jean-Luc Durand, Dominique Bicout
- 20-11 The role of dance communication and inspectors in tracking changes in a dynamic environment by honey bees**
Boris Granovskiy*, Tanya Latty, Michael Duncan, David J.T. Sumpter, Madeleine Beekman
- 20-12 An automated measurement system for behavioral analysis in the observation honeybee hive**
Hidetoshi Ikeno*, Mai Takahashi, Tadaaki Akamatsu, Toshifumi Kimura, Mizue Ohashi
- 20-13 The common stomach as a center of information sharing for nest construction in social wasps**
István Karsai*, Andrew Runciman
- 20-14 A behavioral tracking system for multiple honeybees on a plane surface**
Toshifumi Kimura*, Hidetoshi Ikeno, Karl Crailsheim, Thomas Schmickl, Ryuichi Okada, Mizue Ohashi
- 20-15 Moving home: nest site selection in the red dwarf honeybee (*Apis florea*)**
James C. Makinson*, Benjamin P. Oldroyd, Wandee Wattanachaiyingcharoen, Madeleine Beekman
- 20-16 Foraging behavior and colony cycle of *Agelaiia vicina* (Hymenoptera: Vespidae; Epiponini)**
Otavio Augusto Lima de Oliveira*, Fernando Barbosa Noll, John W. Wenzel
- 20-17 Formation of exploratory networks by Argentine ants: from individual behaviour to two-dimensional patterns**
Andrea Perna*, Boris Granovskiy, Simon Garnier, Marjorie Labédan, Vincent Fourcassié, Guy Théraulaz, Stamatios Nicolis, David Sumpter
- 20-18 Effects of interaction network structure on information flow in social insects**
Noa Pinter-Wollman
- 20-19 Problem solving in complex systems: collective chain formation and gap bridging in the weaver ant *Oecophylla smaragdina***
Simon Robson *, Benjamin Kelly, Jose Halloy, Jean-Louis Deneubourg, Ross Crozier
- 20-20 Digging behaviour and the control of nest size in leaf-cutting ants**
Flavio Roces*, Kerstin Fröhle
- 20-21 (Ir)rational decision-making in ants**
Takao Sasaki*, Stephen Pratt

- 20-22 Making a decision in spite of the noise: nest-site selection by *Apis florea***
Timothy Schaerf*, James Makinson, Mary Myerscough, Madeleine Beekman
- 20-23 Mapping social networks in house-hunting ants**
Zachary Shaffer*, Takao Sasaki, Stephen Pratt
- 20-24 Heat, carbon dioxide, and humidity generated by honeybees jointly act to kill hornets**
Michio Sugahara*, Fumio Sakamoto
- 21-1 Chemical ecology of eusocial gall-inducing thrips, their host plants and nest parasites**
Olle Anderbrant*, Monica De Facci, Glenn P. Svensson, Sheena E. Fry, Thomas W. Chapman
- 21-2 Combining disparate information to make good decisions: the effect of receiver-forager interaction on forager allocation**
James Edwards, Mary Myerscough*
- 21-3 Relative Abundance of n-Alkane Cuticular Hydrocarbons and Interaction Rate Inform Harvester Ant Foraging Decisions**
Michael J. Greene
- 21-4 Generalisation and discrimination trail pheromones of different nests in the ant *Camponotus aethiops***
Fernando J. Guerrieri*, Marcus Stensmyr
- 21-5 Chemical ecology of the termite genus *Protrichotermes*: from anatomy to chemistry and function**
Robert Hanus*, Jan Šobotník, David Sillam-Dussès, Blanka Kalinová, Vladimír Vrkoslav, Josef Cvačka, Pavel Jiroš, Irena Valterová, Rafal Piskorski, Yves Roisin, Thomas Bourguignon, Christian Bordereau
- 21-6 Sleep deprivation impairs precision of waggle dance signaling in honey bees**
Barrett A. Klein*, Arno Klein, Margaret K. Wray, Ulrich G. Mueller, Thomas D. Seeley
- 21-7 Bumblebee behavior: how do past and present foragers at the patch affect individual decisions?**
Amparo Lázaro, Anne Lene T. O. Aase*, Ørjan Totland
- 21-8 The cues have it; nest-based, cue-mediated recruitment to carbohydrate resources in a swarm-founding social wasp**
Teresa I. León*, Erik V. Nordheim, Benjamin J. Taylor, Robert L. Jeanne
- 21-9 Promiscuous honey bee queens generate colonies with a critical minority of waggle-dancing foragers**
Heather R. Mattila*, Thomas D. Seeley
- 21-10 Associations between different ant species: Interspecific nestmate recognition and potential benefits**
Florian Menzel*, Nico Blüthgen, Thomas Schmitt
- 21-11 Response to fertility information is not fixed and changes with colony growth in the ant *Camponotus floridanus***
Dani Moore*, Jürgen Liebig
- 21-12 Species-specific vibrational behaviors against photostimulation in termites**
Wakako Ohmura*, Takuma Takanashi, Eiji Ohya, Youki Suzuki, Yutaka Kataoka, Makoto Kiguchi
- 21-13 Recruitment strategies and colony size in ants**
Robert Planque*, Jan Bouwe van den Berg, Nigel R. Franks
- 21-14 Raid organisation and division of labour in slave-making ants**
Sebastian Pohl*, Susanne Foitzik
- 21-15 Decoding waggle dances to determine foraging patterns of Honey bees throughout the year**
Fiona C. Riddell*, Margaret J. Couvillon, Francis L. W. Ratnieks
- 21-16 The smell of competition - does colony scent influence worker reproduction in *Bombus terrestris*?**
Ann-Marie Rottler*, Anna Sramkova, Manfred Ayasse

- 21-17 Struggle for royalty: queens of *Ropalidia marginata* employ both pheromones and aggression**
Paromita Saha*, Krishna N. Balasubramaniam, J. N. Kalyani, K. Supriya, Anantha Padmanabhan, Raghavendra Gadagkar
- 21-18 Signals and cues used for orientation and communication by meliponine bees during defense and aggression**
Dirk Louis P. Schorkopf
- 21-19 Multi-component trail pheromone in termites (Isoptera)**
David Sillam-Dussès*, Etienne Sémon, Alain Robert, Essè Anani Kotoklo, Jan Šobotník, Robert Hanus, Irena Valterová, Christian Bordereau
- 21-20 Pheromone disruption of ant trailing behavior in two species**
David M. Suckling, Lloyd D. Stringer*, Robert W. Peck, Ashraf M. El-Sayed, Barry Bunn, Robert K. Vander Meer
- 21-21 Inhibiting worker reproduction in *Dinoponera quadriceps*: the effects of behavior on reproductive signals**
Ivelize C. Tannure-Nascimento*, Klaus Hartfelder, Izabel C. Turatti, Ronaldo Zucchi, Fabio S. Nascimento
- 21-22 Identification of termite queen pheromone regulating caste differentiation**
Tomoyuki Yokoi*, Chihiro Himuro, Yuuka Yamamoto, Kenji Matsuura
- 22-1 Sensing colony size on the basis of physical contacts**
Tomonori Kikuchi*, Kazuki Tsuji
- 22-2 Intra-nest hydrocarbon dynamics and worker reproductive decisions in the annual bumble bee *Bombus terrestris***
Pierre Blacher*, Boris Yagound, Stéphane Chameron, Fabrice Savarit, Nicolas Châline
- 22-3 Maintaining the gestalt: a potential role of nest material in nestmate recognition**
Nick Bos*, Lena Grinsted, Luke Holman
- 22-4 A proteomic approach to the study of soluble proteins involved in honeybee olfaction**
Francesca Romana Dani*, Immacolata Iovinella, Elena Michelucci, Alberto Niccolini, Antonio Felicioli, Maria Antonietta Calvello, Maria Giovanna Carucci, Huili Qiao, Stefano Turillazzi, Paolo Pelosi
- 22-5 Identification of an ant queen pheromone regulating worker sterility**
Luke Holman*, Charlotte G Joergensen, John Nielsen, Patrizia d'Ettorre
- 22-6 Uncoupling fertility from fertility-associated pheromones in workers honeybees (*Apis mellifera*)**
Osnat Malka*, Tamar Katzav-Gozansky, Abraham Hefetz
- 22-7 We are family - Argentine ants living in harmony!**
Natasha P. Mothapo*, Theresa C. Wossler
- 22-8 Defeat of the clones: rapid signal development in *Apis mellifera capensis* does not give the upper hand in invasions**
Lee-Ann Noach-Pienaar, Theresa Clair Wossler*
- 22-9 The Cape honeybee (*Apis mellifera capensis*); a social parasite by predisposition?**
Christian W.W. Pirk*, Vincent Dietemann, Robin Crewe, Randall Hepburn, Fu-Liang Hu, Mingxian Yang, Huo-Qing Zheng
- 22-10 Chemical comparison between contents of cephalic salivary glands and cuticular profile of *Scaptotrigona postica* workers**
Silvana B. Poiani*, Falko P. Drijfhout, E. David Morgan, Carminda da Cruz-Landim
- 22-11 An oriental orchid seems to be mimicking the mandibular gland components of *Apis cerana***
Fumio Sakamoto*, Michio Sugahara

- 22-12 Blending of heritable recognition cues among ant nestmates to create a gestalt odour prevents within-colony nepotism**
 Jelle S. van Zweden*, Josefine B. Brask, Jan H. Christensen, Jacobus J. Boomsma, Timothy A. Linksvayer, Patrizia d'Ettorre
- 23-1 Regulation of reproduction in the primitively eusocial wasp *Ropalidia marginata*: on the trail of the queen pheromone**
 Anindita Bhadra*, Aniruddha Mitra, Sujata A. Deshpande, K. Chandrasekhar, Dattatraya G. Naik, Abraham Hefetz, Raghavendra Gadagkar
- 23-2 Cuticular hydrocarbons or peptides: which one is responsible for nestmate recognition in *polistes dominolus*?**
 Claudia Bruschini*, Rita Cervo, Alessandro Cini, Lisa Signorotti, Luigi Pontieri, Stefano Turillazzi
- 23-3 *Kladothrips* vs. *Koptothrips*: comparing the peripheral chemosensory systems of a eusocial thrips and its parasite**
 Monica De Facci*, Rita Wallén, Eric Hallberg, Glenn Svensson, Olle Anderbrant
- 23-4 Genome and communication - the genetic architecture of communication in ant societies**
 Martin Helmkamp*, Elizabeth Cash, Jürgen Gadau
- 23-5 Worker castes of leaf-cutting ants show differences in aggressive behavior**
 Janni Larsen*, Volker Nehring, Patrizia d'Ettorre
- 23-6 My house, my rules: Context-dependent acceptance of non-nestmate conspecifics in a primitively eusocial paper wasp**
 Floria Mora-Kepfer
- 23-7 Nestmate recognition in the ant *Dinoponera quadriceps*: task-related efficiency and chemical cues**
 Fabio S. Nascimento*, Ivelize C. Tannure-Nascimento, Izabel C. Turatti, José O. Dantas
- 23-8 Cuticular hydrocarbons on harvester ant (*Pogonomyrmex barbatus*) middens guide foragers to the nest**
 Shelby Sturgis*, Michael Greene, Deborah Gordon
- 24-1 Dopamine biosynthesis and oogenesis in the honeybee, *Apis mellifera*: a link between reproductive biology and behaviour?**
 Elizabeth J. Duncan*, Kim Hughes, Peter K. Dearden
- 24-2 Brain scaling in ants: from total brain size to individual neuropil**
 Marc A. Seid*, Ricardo Cossio, William Weislo
- 25-1 Neural coding in the dual olfactory pathway of the honeybee *Apis mellifera***
 Julie Carcaud*, Martin Giurfa, Jean-Christophe Sandoz
- 25-2 Sucrose acceptance threshold and feeding behaviour in nectivorous ants: starvation and serotonin effects**
 Agustina Falibene*, Roxana Josens
- 25-3 Evolution of elaborate mushroom bodies in the Hymenoptera**
 Sarah M Farris
- 25-4 Neuronal modifications of octopaminergic and tyraminerpic systems in termite soldiers**
 Yuki Ishikawa*, Hitoshi Aonuma, Ken Sasaki, Toru Miura
- 25-5 Differential brain morphogenesis and transcription profile of genes related to neurogenesis in castes of *A. mellifera***
 Livia Moda*, Vanessa Bonatti, Ana Durvalina Bomtorin, Marcela Laure, Angel Roberto Barchuk, Zilá Luz Paulino-Simões
- 25-6 Age-related changes in honey bee responses to *apiguard*, a thymol-based treatment used to control *Varroa mite***
 Fanny Mondet*, Mark Goodwin, Alison Mercer

- 25-7 Pheromonal regulation of behavioural plasticity in the honeybee**
Thomas S. Muenz*, Wolfgang Rössler
- 25-8 Acute disruption of the NMDA receptor subunit NR1 in the honeybee brain selectively impairs memory formation**
Laurenz Müßig, Antje Richlitzki, Reinhard Rößler, Dorothea Eisenhardt, Randolph Menzel, Gérard Leboulle*
- 25-9 Fos-like immunoreactivity expression in different subtypes of kenyon cells**
Roberta Cornélio Ferreira Nocelli*, Thaisa Cristina Roat, Elaine Cristina Mathias da Silva Zacarin, Mario Sérgio Palma, Osmar Malaspina
- 25-10 Effect of sublethal dose of fipronil in the neural activity of mushroom bodies from newly-emerged worker *Apis mellifera***
Thaisa Cristina Roat*, Caroline Almeida Rossi, Roberta C. F. Nocelli, Stephan Malfitano Carvalho, Elaine C. M. Silva-Zacarin, Osmar Malaspina
- 25-11 The effect of octopamine treatment on responses of the red wood ants (*Formica polyctena*) to insect prey is context dependent**
A. Szczuka*, A. Wnuk, J. Korczynska, B. Symonowicz, A. Gonzalez Szwacka, P. Mazurkiewicz, W. Kostowski, E. J. Godzinska
- 25-12 Developmental stage- and task-dependent change in the expression of a non-coding RNA, *Nb-1*, in the worker honeybee brain**
Hirototo Tadano*, Yurika Yamazaki, Hideaki Takeuchi, Takeo Kubo
- 25-13 The 5-HT1A receptor of the honeybee and involvement of serotonin in the regulation of phototactic behavior**
Markus Thamm*, Arnd Baumann, Wolfgang Blenau
- 25-14 The role of dopamine receptors in the regulation of worker sterility in the honey bee *Apis mellifera***
Vanina Vergoz*, Julianne Lim, Ben Oldroyd
- 25-15 The biological clock of *Melipona quadrifasciata* (Apidae; Meliponini): an anatomical study of the forager's brain**
Cintia Etsuko Yamashita*, Edna F. Haapalainen, Mirian David Marques
- 26-1 Intrinsic and extrinsic factors in social evolution and the geographical distribution of spider sociality**
Leticia Avilés
- 26-2 Dynamics of aggregation in woodlice: individual preferences and collective choice**
Pierre Broly*, Cédric Devigne
- 26-3 Soldiers are not created equally**
Holly Caravan*, Tom Chapman
- 26-4 On the threshold of eusociality: the reproductive status of the individuals in passalid beetle colonies from Thailand**
William A. Foster*, Farnon Ellwood
- 26-5 Physiological effects and fitness consequences of maternal manipulation in a tropical sweat bee (*Megalopta genalis*)**
Karen M. Kapheim*, Adam R. Smith, Kate Ihle, Gro V. Amdam, William T. Wcislo, Peter Nonacs
- 26-6 Social evolution in termites**
Judith Korb
- 26-7 Social polymorphism in the Australian small carpenter bee, *Ceratina* (Neoceratina) *australensis* (Hymenoptera: Apidae)**
Sandra M. Rehan*, Michael P. Schwarz, Miriam H. Richards

- 26-8 The evolution of alloparental care in social comb-footed spiders**
Kieran Samuk*, Leticia Avilés
- 26-9 Male and female mediated gene flow in the social spider *Stegodyphus dumicola***
Deborah R. Smith*, Yael D. Lubin, Yong-Chao Su
- 26-10 Termite soldiers are responsible for the regulation of presoldier molt by rapid JH-decreasing effects in the colony**
Dai Watanabe*, Kiyoto Maekawa
- 27-1 Differential host defense against multiple parasites of distinct impact**
Christoph von Beeren*, Volker Witte
- 27-2 Understanding the cost-benefit balance of immune activation in nature: a field experiment with bumblebees**
Gabriel Cisarovsky*, Hauke Koch, Paul Schmid-Hempel
- 27-3 Beeworm: Gene expression in a Host-Parasite Interaction**
Thomas J. Colgan*, James C. Carolan, Seirian Sumner, Mark L. Blaxter, Mark J. F. Brown
- 27-4 Genomic analysis of the effects of *Nosema apis* infection on honey bee (*Apis mellifera*) workers**
Holly Holt*, Kate Aronstein, Christina Grozinger
- 27-5 Navigating strategies of trail-following in termites**
Xing Ping Hu*, Neoh Kok Boon, Michael Lenz, Lee Chow-Yang
- 27-6 Immune defense costs, storage of proteins and reproductive status in *Apis mellifera* queenless workers**
Anete Pedro Lourenço*, Juliana Ramos Martins, Karina Rosa Guidugli-Lazzarini, Liliane Fróes Macedo, Érica Donato Tanaka, Márcia Maria Gentile Bitondi, Zilá Luz Paulino Simões
- 27-7 Symbiont-mediated protection against fungal infection in the dampwood termite, *Zootermopsis angusticollis***
Rebeca B. Rosengaus*, Kelley F. Schultheis, Mark Bulmer, Alla Shnayderman
- 27-8 Microbial inhibition and immune response specificity in the ant *Formica exsecta***
Hannele Luhtasela-El Showk*, Emma Vitikainen, Liselotte Sundström
- 27-9 Sick ants are bad doctors: health state of group members affects social immunity**
Miriam Stock*, Ursula Wandinger, Sylvia Cremer
- 27-10 Hygienic brood care: is it affected by experience?**
Claudia Westhus*, Claudie Doums, Sylvia Cremer
- 27-11 Hyperpolyandry as a disease resistance adaptation in honey bees (*Apis mellifera*)**
Noah Wilson-Rich*, David R. Tapy, Philip T. Starks
- 27-12 Implications of eusocial lifestyle on number of immune genes in the Hymenopteran**
Sze Huei Yek*, Morten Schiøtt, Timothy A Linksvayer, Alexander S Mikheyev, Jacobus J Boomsma
- 28-1 Wood ants surround their brood with tree resin**
Timothée Brütsch*, Michel Chapuisat
- 28-2 Ants' survival and waste management in *Myrmica rubra* nests**
Lise Diez, Philippe Lejeune, Claire Detrain*
- 28-3 Parasite resistance in the bumble bee *Bombus terrestris* at the molecular level**
Silvio Erler*, Mario Popp, H. Michael G. Lattorff
- 28-4 Impact of genetic diversity on disease resistance during colony founding in a socially polymorphic ant**
Dumas Galvez*, Anabelle Reber, Michel Chapuisat

- 28-5 Easier life for honey bee pathologists: a novel method for oral infection of individual workers**
Ulrike Hartmann*, Jochen Pflugfelder, Peter Neumann
- 28-6 Factors influencing infection rates of the parasite *Nosema bombi* in natural populations of the bumblebee *Bombus terrestris***
Anett Huth-Schwarz*, F. Bernhard Kraus, Josef Settele, Robin FA Moritz
- 28-7 Specialized pathogenic fungi from the genus *Pandora* (Entomophthorales) and their capacity to manipulate *Formica* ant hosts**
Annette B. Jensen*, Joanna Piatkowska, David P. Hughes, Jacobus J. Boomsma, Jørgen Eilenberg
- 28-8 The prevalence of a nematode parasite and the reproductive success of *Bombus terrestris* from three populations in Europe**
Catherine M. Jones*, Mark J. F. Brown
- 28-9 Parasite virulence and host resistance in a generalist nematode parasite of bumble bee queens**
Michael Kelly, Mark J.F. Brown*
- 28-10 A quantitative model of honey bee colony population dynamics**
David S. Khoury, Mary R. Myerscough, Andrew B. Barron*
- 28-11 Colony level costs of sequential exposure of ant societies to different pathogens**
Matthias Konrad*, Sylvia Cremer
- 28-12 Characteristics of honey bee colonies (*Apis mellifera*) in Sweden surviving *Varroa destructor* mite infestation**
Barbara Locke*, Yves Le Conte, Ingemar Fries
- 28-13 Relationship between nest size of the hornet *Vespa analis* and prevalence of its parasite *Xenos moutoni***
Shun'ichi Makino*, Yuichi Yamaura, Hiromi Yamauchi
- 28-14 Preserving pollinator health in East Africa**
Harland M. Patch*, Maryann Frazier, Elliud Muli, Daniel Masiga, James L. Frazier, Christina M. Grozinger, James M. Tumlinson
- 28-15 Temporal variation of parasitism in bumblebees (*Bombus* spp.) by *Crithidia bombi* (Trypanosomatidae) on a local scale**
Mario Popp*, Silvio Erler, H.M.G. Lattorff
- 28-16 Overview of USDA research on colony collapse disorder in honey bees and funding opportunities**
Mary Purcell-Miramontes*, Kevin Hackett, Jeffrey Pettis
- 28-17 Genetic variation in resistance to *Nosema* parasites in the European honeybee *Apis mellifera***
Katherine E Roberts*, Giles Budge, William O.H. Hughes
- 28-18 Nematode-parasitized hornets visit overwintering sites in summer to release juvenile parasites for transmission**
Katsuhiko Sayama*, Hajime Kosaka, Shun'ichi Makino
- 28-19 Links between *Varroa destructor* infestation and honeybee immunity**
Jeremy Tabart, Maria Bolt, Michel Treihou, Angelique Vetillard*
- 28-20 Genetic diversity in a trypanosome parasite infecting key pollinators**
Martina Tognazzo*, Regula Schmid-Hempel, Paul Schmid-Hempel
- 28-21 Variation in honeybee mortality induced by phylogenetically different chalkbrood (*Ascosphaera apis*) strains**
Svjetlana Vojvodic*, Annette B. Jensen, Jørgen Eilenberg, Jacobus J. Boomsma
- 28-22 Diversity and pathogenesis of ascosphaeraceous fungi associated with cavity nesting megachilids and *Apis mellifera***
Anja Amtoft Wynns*, Annette Bruun Jensen, Jørgen Eilenberg

- 28-23 Effect of virulence and odor of *Metarhizium anisopliae* on the resistant-behaviors of the termite, *Coptotermes formosanus***
Aya Yanagawa*, Nao Fujiwara-Tsujii, Toshiharu Akino, Tsuyoshi Yoshimura, Kunio Tsunoda, Yuji Imamura, Susumu Shimizu
- 30-1 Defence against worker reproductive parasitism in *Apis mellifera***
Nadine Chapman*, Madeleine Beekman, Ben Oldroyd
- 30-2 Group navigation leads to increased path efficiency in the wood ant *Formica rufa***
Mike Cleese*, Paul Graham
- 30-3 Digging effort in leaf-cutting ant queens and its effects on survival and colony growth during the claustral phase**
Roberto da Silva Camargo*, Luiz Carlos Forti, Ricardo Toshio Fujihara, Flavio Roces, Juliane F. S. Lopes
- 30-4 The daily activity rhythm of a subterranean termite, *Reticulitermes speratus***
Taro Fuchikawa*, Kenta Matsubara, Kenji Matsuura, Takahisa Miyatake
- 30-5 Landmarks characterization in orientation of honey bee males (*Apis mellifera*) in Puerto Rico**
Alberto Galindo-Cardona, Rafiné Moreno-Jackson*, Laura Caicedo-Quiroga, Tugrul Giray
- 30-6 Where are the drone congregation areas of the honey bee *Apis mellifera*?**
Alberto Galindo-Cardona, Rafiné Moreno-Jackson, Carlos Rivera-Rivera, Carlos Huertas-Dones, Laura Caicedo-Quiroga*, Tugrul Giray
- 30-7 Worker-caste differentiation induced by parents in the subterranean termite *Reticulitermes speratus***
Yoshinobu Hayashi*, Hitoshi Miyata, Toru Miura, Osamu Kitade
- 30-8 Behavioural variations in colony grow rates and worker oviposition in stingless bees' queenless colonies**
Túlio M. Nunes*, Ronaldo Zucchi
- 30-9 Dominance hierarchies among worker ants in queenless colonies of *Pseudomyrmex gracilis***
Volker S. Schmid*, Thomas Rössler, Jürgen Heinze
- 30-10 The influence of colony environment on worker body size in the bumblebee *Bombus terrestris***
Hagai Shpigler*, Matan Tamarkin, Guy Bloch
- 30-11 The effects of worker behavioural status on responses to homocolonial brood in the red wood ant (*Formica polyctena*)**
B. Symonowicz*, A. Szczuka, J. Korczynska, A. Gonzalez Szwacka, P. Mazurkiewicz, A. Mirecka, A. Wnuk, E. J. Godzinska
- 30-12 Scanning behaviours in *Melophorus bagoti*: a window onto the mind of a navigating ant**
Paul Graham, Antoine Wystrach*, Ken Cheng
- 30-13 Aggressive behaviour of workers of the red wood ant (*Formica polyctena*): the effects of past and present behavioural specialisation**
A. Wnuk*, A. Szczuka, J. Korczynska, B. Symonowicz, P. Mazurkiewicz, A. Gonzalez Szwacka, E. J. Godzinska
- 31-1 The Iberian ant *Cataglyphis floricola* species complex: molecular evidence for genetic isolation and speciation**
Fernando Amor*, Juan A. Galarza, Patrocinio Ortega, Michael J. Jowers, Xim Cerdá, Raphaël Boulay
- 31-2 Effect of CO₂ treatment on the ovarian development of honeybee workers (*Apis mellifera* L.)**
Bruno Berger*, Carminda da Cruz Landim
- 31-3 Nest structure, sex ratio and pollen diet of *Euglossa cordata* (Apidae: Euglossini)**
Samuel Boff*, Cynthia Fernandes Pinto da Luz, Isabel Alves-dos-Santos

- 31-4 Inferring reproductive activity through the ovarian development assessment: comparison of different methods**
Alessandro Cini, Stefania Meconcelli, Rita Cervo*
- 31-5 Laboratory and field detection of *Wasmannia auropunctata* (Hymenoptera: Formicidae) marked with rabbit immunoglobulins**
Selene Escobar Ramírez*, Mónica Ramírez , Liliana Valderrama, James Montoya-Lerma, Inge Armbrrecht
- 31-6 Functional role of the fungus symbiont on the fungus-growing ants: food and protection**
Hermógenes Fernández-Marín*, Sophie A. Armitage, William T. Wcislo, Jacobus J. Boomsma
- 31-7 Cytoplasmic and nuclear immunolocalization of N-cadherin in ovary of *Apis mellifera* with specific C-terminal antibody**
Mônica M. Florecki*, Klaus Hartfelder
- 31-8 Microsatellites show that forest degradation is isolating subpopulations of the stingless bee *Tetragonisca angustula***
Flavio O. Francisco*, Benjamin P. Oldroyd, Maria C. Arias
- 31-9 Native honey bee biodiversity in Turkey and conservation**
Meral Kence
- 31-10 The global ant project, the encyclopedia of life and web based species pages**
David Lubertazzi
- 31-11 Effect of supplemental proteins and vitamins on honey bee foraging and activities with their production in Iraq/Kuwait**
Talal Taher Mahmoud*, Zahra N. Shamdin
- 31-12 Repellency and toxicity of three essential oils against subterranean termites**
Farkhanda Manzoor*, Berhan M. Ahmed, Saadia A. Malik, K.J. Cheema, Shugufta Naz
- 31-13 What 11, 000 ants can tell use about parental investment strategy**
Peter Nonacs*, Brittany Enzmann
- 31-14 Study on the biology and efficiency of testes determination of *Habrobracon hebetor* Say (Hym.: Braconidae) on larvae of *Cadra cautella***
Nouraddin Shayesteh
- 31-15 Role of social insects on soil carbon dynamics in forest ecosystems**
Mizue Ohashi
- 31-16 How to deal with species' delimitation in social insects? A case study in termites of an old and very current problem**
Tiago Fernandes Carrijo*, Eliana Marques Canello