Pierre-André EYER

15/06/1987 - French citizen

POSTDOCTORAL RESEARCH ASSOCIATE IN EVOLUTIONARY BIOLOGY

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PROFESSIONAL APPOINTMENTS & EDUCATION

Feb. 2017-*Now.* Postdoctoral Research Associate (*Department of Entomology, Texas A&M University, College Station, Texas, U.S.A.*)
Comparative population genetics of invasive ant species
Advisor: Edward Vargo Publication: *P9, P10*

Sept. 2016-Feb. 2017. Post doctorate fellow, ATER (*École Pratique des Hautes Études -EPHE-, Biologie Integrative des Populations, Paris, France*)
Mating system and population structure of the desert ant *Cataglyphis cursor*
Advisor: Claudie Doums

2014-2016. Post doctorate fellow (*Department of Zoology, The Georges S. Wise Faculty of Life Sciences, Tel Aviv University, Israel*)
Social structure and phylogeography of *Cataglyphis* desert ants
Advisor: Abraham Hefetz; Publications: *P5, P6, P7, P8*

2010-2014. Ph.D. thesis (*Evolutionary Biology and Ecology, Université Libre de Bruxelles, Belgium*)
Reproductive strategies and genetic diversity in *Cataglyphis* desert ants
Advisor: Serge Aron; Publications: *P2, P3, P4*

2010. Master thesis (*Evolutionary Biology and Ecology, Université Libre de Bruxelles, Belgium*)
Reproductive strategies of the ant *Cataglyphis velox*
Advisors: Serge Aron & Laurianne Leniaud; Publication: *P1*

2009. Master internship (*Evolutionary Biology and Ecology, Université Libre de Bruxelles, Belgium*)
Genetic diversity and relatedness in the common bat species *Pipistrellus pipistrellus*
Advisor: Serge Aron

2008-2010. Master degree in Ecology & Populations Biology (*University of Angers, France*)
2005-2008. Bachelor degree in Animal Biology (*University of Angers, France*)

PUBLICATIONS & PRESENTATIONS

Publications Accepted in Refereed Journals

P10. **Eyer P-A**, McDowell B, Johnson LNL, Calcaterra LA, Fernandez, MB, Shoemaker D, Puckett RT, Vargo EL (2018) Supercolonial structure of invasive populations of the tawny crazy ant *Nylanderia fulva* in the US. *BMC Evolutionary Biology,* 18, 209.

P9. **Eyer P-A**, Matsuura K, Vargo EL, Kobayashi K, Yashiro Y, Suehiro W, Himuro C, Yokoi T, Guénard B, Dunn RR, Tsuji K (2018) Inbreeding tolerance as a pre-adapted trait for invasion success in the invasive Needle ant *Brachyponera chinensis*. *Molecular Ecology,* 27, 4711-4724.

P8. **Eyer P-A**, Hefetz A (2018) Cytonuclear incongruences hamper species delimitation in the socially polymorphic desert ants of the *Cataglyphis albicans* group in Israel. *Journal of Evolutionary Biology,* 31, 1828-1842.

P7. Saar M, **Eyer P-A**, Kilon-Kallner T, Hefetz A, Scharf I (2018) Within-colony genetic diversity differentially affects foraging, nest maintenance, and aggression in two species of harvester ants. *Scientific Report,* 8, 13868.

P6. **Eyer P-A**, Seltzer R, Reiner-Brodetzki T, Hefetz A (2017) An integrative approach to untangling species delimitation in the *Cataglyphis bicolor* desert ant complex in Israel. *Molecular Phylogenetic and Evolution,* 115, 128-139.

P5. Iunesco A, **Eyer P-A** (2016) Notes on *Cataglyphis* Foerster, 1850 species belonging to the *bicolor* species-group in Israel; and a description of a new species. *Israeli Journal of Entomology*, 46, 109-131.

P4. **Eyer P-A**, Leniaud L, Tinaut A, Aron S (2016) Combined hybridization and mitochondrial capture shape complex phylogeographic patterns in hybridogenetic *Cataglyphis* desert ants. *Molecular Phylogenetic and Evolution*, 105, 251-262.

P3. Aron S, Darras D, **Eyer P-A**, Leniaud L, Pearcy P (2014) Colony genetic structure and breeding system in the ant *Cataglyphis viatica* (Fabricius, 1787). *Bull. Inst. Sci. Rab.*

P2. **Eyer P-A**, Freyer J[#], Aron S (2013) Genetic polyethism in the polyandrous desert ant *Cataglyphis cursor*. *Behavioral Ecology* 24, 144-151. [#]Supervised master student.

P1. **Eyer P-A**, Leniaud L, Darras H, Aron S (2013) Hybridogenesis through thelytokous parthenogenesis in two *Cataglyphis* desert ants. *Molecular Ecology* 22, 947-955.

Publications in Preparation

Eyer P-A, Blumenfeld AJ, Vargo EL (*In Prep*) Genetic differences between males and females in an ant, reproductive system of the invasive Tawny Crazy ant *Nylanderia fulva*.

Eyer P-A, Boursier T, Boulay R, Monin T, Mona S, Doums C (*In Prep*) Mating system and population structure of the desert ant *Cataglyphis cursor*.

Zelter R, Eyer P-A, Hefetz A, Soroker V (*In Prep*) Parental effect in hygienic behavior of the honeybee *Apis mellifera.*

Presentations

Eyer P-A, Vargo E (2018) Genetic differences between males and females in an ant highlight the reproductive system of the invasive Tawny Crazy ant *Nylanderia fulva. Entomological Society of America meeting, Vancouver, BC, Canada.*

Espinoza E, Eyer P-A, Vargo E (2018) The population and colony genetic structure of the dark rover ant, *Brachymyrmex patagonicus* Mayr. *Entomological Society of America meeting, Vancouver, BC, Canada.*

Eyer P-A, Matsuura K, Vargo EL, Kobayashi K, Yashiro Y, Suehiro W, Himuro C, Yokoi T, Guénard B, Dunn RR, Tsuji K (2018) Inbreeding tolerance as a pre-adapted trait for invasion success in the invasive Needle ant *Brachyponera chinensis. International Meeting of the IUSSI, Guaruja, Brazil.*

Eyer P-A, Matsuura K, Tsuji K, Vargo E (2017) Impoverished genetic diversity and colony breeding structure in introduced populations of the invasive ant *Brachyponera chinensis. Entomological Society of America meeting, Denver, CO, USA.*

Vargo E, McDowell B, Eyer P-A, Johnson L, Calcaterra L, Shoemaker D, Puckett R (2017) Supercolonial structure in the invasive population of the tawny crazy ant *Nylanderia fulva. Entomological Society of America meeting, Denver, CO, USA.*

Eyer P-A, Reiner T, **Hefetz A** (2016) Social polymorphism or cryptic speciation in the desert ant *Cataglyphis. 6th European Meeting of the IUSSI, Helsinki, Finland.*

Eyer P-A, Leniaud L, Aron S (2014) Social hybridogenesis shapes complex phylogeographic patterns in *Cataglyphis* desert ants. *International Meeting of the IUSSI, Cairns, Australia.*

Eyer P-A, Leniaud L, Darras H, Aron S (2013) Hybridogenesis in *Cataglyphis* clonal ants*. 27th Colloque de l'UIEIS, Villetaneuse, France.*

Eyer P-A, Aron S (2012) Genetically mediated division of labor in the polyandrous desert ant *Cataglyphis cursor. 19th Benelux Congress of Zoology, Brussels, Belgium.*

Darras H, Leniaud L, Eyer P-A, Aron S (2012) Social hybridogenesis in clonal ants of the *Cataglyphis altisquamis* group. *19th Benelux Congress of Zoology, Brussels, Belgium.*

Eyer P-A, Leniaud L, Darras H, Aron S (2012) Hybridogenesis through thelytokous parthenogenesis in two *Cataglyphis* desert ants*. 5th European Meeting of the IUSSI, Montecatini Terme, Italy.*

Eyer P-A, Freyer J, Aron S (2012) Genetic polyethism in the polyandrous desert ant *Cataglyphis cursor. 5th European Meeting of the IUSSI, Montecatini Terme, Italy.*

Invited Presentations

Eyer P-A, Aron S. (2016) Social hybridogenesis: the unorthodox mating system of the *Cataglyphis* desert ants*. 8th International Congress of Zoology, Bucharest, Romania.*

LABORATORY, ANALYTICAL & STATISTICAL SKILLS

Field sampling (France, Spain, Portugal, Morocco, Israel, Texas) & rearing of ant and termite colonies
Genetic analyses:
- DNA extraction & sequencing: microsatellite, mitochondrial & nuclear markers
- Populations' genetic structure & phylogeographic analyses (*e.g.,* Parental offspring inferences; Wright's *F-statistics* estimation; Structure, isolation-by-distance & AMOVA analyses).
- Phylogenetic analyses (Phylogenetic reconstruction & Species delimitation models).

Chemical analyses:
- Hydrocarbon extraction and mapping

Statistical analyses with R software
Parasite preparation (*i.e., Metarhizium anisoplae* fungus culture & solution preparation) & ant infection.

TEACHING

Practical exercises for Population Genetics (*Université Libre de Bruxelles, Belgium;* Bachelor degree)
Introduction to Population Genetics (*EPHE, Paris, France;* Master degree)

SERVICES

Reviewer: Peer-reviewed Journals

Article reviewer for *Molecular Ecology, Heredity, Frontiers in Ecology & Evolution, Myrmecological News, Insect Conservation and Diversity, Journal of Economic Entomology.*

Reviewer: Grants Agencies

Project expertise for grant funding for *ECOS-Nord* comity (French Minister).

Student Advising

Master thesis (Guery P-A, 2013-2014) Genetic diversity and pathogens resistance in *Cataglyphis* ants
Bachelor degree (Avet M, 2013) Paternal origins and pathogens resistance in *Cataglyphis* desert ants
Master thesis (Freyer J, 2011-2012) Genetic polyethism in the polyandrous desert ant *C. cursor*
Bachelor degree (Caulat L, Laymand E, 2016) Imbreeding & thelytokous parthenogenesis in *C. Cursor*

Institutional Services

Seminar organizer (2012-2014) for the *Evolutionary Ecology & Evolution* group in Brussels University.

Community Services

Talk at high school (2016 - The French School of Bucharest): '*Genetic as a tool to study Ecology and Evolution'*.

MEMBERSHIPS, GRANTS & AWARDS

Member of the Entomological Society of America (ESA)
Member of the International Union for the Study of Social Insects, North American Section (IUSSI-NAS)
Former member of the International Union for the Study of Social Insects, French Section (UIEIS)

2014 – The Georges S. Wise Science Fellowship, Dept. of Zoology
2015 – David Furth Fellowship for systematic Entomology