Caroline Fromont

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EDUCATION

Hawkesbury Institute for the Environment, UWS, Australia — 2013-present
Ph.D. Candidate in Molecular Ecology
Supervision: James Cook, Markus Riegler

University of Lyon, France — 2011-2012
M.sc in Geography — Interface Nature and Societies

Agrocampus Ouest, Rennes, France — 2008-2011
M.sc in Agronomy — Crop Protection and Environment

Lycee Jean-Baptiste Say, Paris, France — 2006-2008
Preparatory classes (equivalent to an undergraduate degree) -
Majors in Biology and Chemistry, minors in Physics and Mathematics

PROFESSIONAL EXPERIENCES

University of Western Sydney, Australia — 2014-2015
Demonstrator, Invertebrate Biology

INRA and YNSECT, Versailles, France — March 2012-October 2012
Optimization of diets given to insects (*Tenebrio molitor* and *Hermetia illucens*) for protein production for animal and human consumption
Supervision: Frederic Marion-Poll (INRA), Antoine Hubert (Ynsect)

IRD/ICIPE, Nairobi, Kenya — March 2011–September 2011
Study of potential gene flow of Kenyan populations of *Busseola fusca*, focus on some dispersal and reproductive aspects
Supervision: Pascal Campagne, Bruno Le Ru

Museum National d'Histoire Naturelle, Paris, France — August 2010
Bat monitoring in Paris (coordination and recording-1 month)
Supervision: Christian Kerbiriou

Ouarzazate area, Morocco — March 2010
Comparison of agricultural techniques in 2 villages (meeting with farmers and local organizations)

University of Sydney, Australia — August 2009-February 2010
Influence of the macronutrient intake on *Tenebrio molitor* immune response
Supervision: Fleur Ponton, Steve Simpson

PUBLICATIONS

Ponton F., Lalubin F., **Fromont C**., Wilson K., Behm C., Simpson S.J. (2011) Hosts use altered macronutrient intake to circumvent parasite-induced reduction in fecundity. *International Journal of Parasitology* 41 (1) 43-50

Fromont C., Riegler M., Cook J.M. Characterisation of fourteen microsatellite markers for the Australian fig psylloid, *Mycopsylla fici*. (submitted to *Australian Journal of Zoology*)

RESEARCH INTERESTS

Insect diversity and interaction — dispersal and population genetics — nutrition

Ph.D. project : Australian psylloids in complex interactions : species, populations, parasitoids and endosymbionts

A given insect species is typically involved in interactions with several other species, as part of a wider food web (insect herbivore, host plants, parasitoids, predators). Although many species interactions are antagonistic, beneficial associations also occur and there is growing realisation of the importance of microbial endosymbionts in the lives of insects and other animals (i.e. niche accessibility, parasitoid protection). Consequently, our understanding of species interactions and food webs increasingly relies upon investigations at a range of biological levels. Moreover, different elements of the food web may have different patterns of variation in time and space with knock-on effects for species interactions and community structure. During my PhD, I am interested in understanding the relationships between the Australian fig psylloids (*Mycopsylla* spp.), their fig host, parasitoids and endosymbionts. I am using NGS and Sanger sequencing to characterize the diversity and host-specificity of the psylloids, their endosymbionts and parasitoids. In addition, I am comparing inter– and intra-specific genetic variations of the psylloids and their primary and secondary symbionts. By focusing on one species that colonized three islands (Australia, Lord Howe Island and New Zealand), I also want to understand its biogeography and gene flow between populations.

Previous research

In general, I am interested in insect dispersal and I have explored this issue by studying the flight capacities of *Busseola fusca*, a maize pest moth, in a controlled experiment in a flight tunnel. We focussed on this species as it developed a resistance to *Bt* maize in South Africa in few years and we wanted to understand which factors (dispersal, mating preferences, ...) may be involved in the development of this resistance.

I also have a broad interest in insect nutrition. I previously did two studies on this topic. The first, at the University of Sydney, integrated insights of nutritional research in the study of immunity (especially for immune system maintenance). The second, in collaboration with Ynsect, a company that is rearing insects for animal feed and at term, for human food had for objective to identify, locate and quantify industry and restaurant wastes and to start feeding trials using those wastes.

GRANTS & FELLOWSHIPS

ABRS Travel Grant for Association for Tropical Biology and Conservation conference (AU$1650)	2015
Hawkesbury Institute for the Environment Postgraduate Research Award	2013-2016

PRESENTATIONS

Fromont, C., Riegler, M., Cook, J. (Speed talk) Hidden diversity and host specificity in fig-psylloid-parasitoid interactions Ecological Society of Australia, Alice Springs, Australia	2014
Fromont, C., Riegler, M., Cook, J. (oral presentation) Insights into two colonisation events: Australian fig psylloids on Lord Howe Island and New Zealand Association for Tropical Biology and Conservation, Honolulu, USA	2015

MEMBERSHIPS

Royal Zoological Society of New South Wales
Australian Entomological Society
Association for Tropical Biology and Conservation