

Caroline Fromont

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EDUCATION

Hawkesbury Institute for the Environment, Western Sydney Uni, Australia Ph.D. Candidate in Molecular Ecology Supervision: James Cook, Markus Riegler	2013-present
University of Lyon, France M.sc in Geography — Interface Nature and Societies	2011-2012
Agrocampus Ouest, Rennes, France M.sc in Agronomy — Crop Protection and Environment	2008-2011
Lycee Jean-Baptiste Say, Paris, France Preparatory classes (equivalent to an undergraduate degree) - Majors in Biology and Chemistry, minors in Physics and Mathematics	2006-2008

PROFESSIONAL EXPERIENCES

University of Western Sydney, Australia Demonstrator, Invertebrate Biology	2014-2015
INRA and YNSECT, Versailles, France Optimization of diets given to insects (<i>Tenebrio molitor</i> and <i>Hermetia illucens</i>) for protein production for animal and human consumption Supervision: Frederic Marion-Poll (INRA), Antoine Hubert (Ynsect)	March 2012– October 2012
IRD/ICIPE, Nairobi, Kenya Study of potential gene flow of Kenyan populations of <i>Busseola fusca</i> , focus on some dispersal and reproductive aspects Supervision: Pascal Campagne, Bruno Le Ru	March 2011– September 2011
Museum National d'Histoire Naturelle, Paris, France Bat monitoring in Paris (coordination and recording-1 month) Supervision: Christian Kerbiriou	August 2010
Agroproj', Morocco Comparison of agricultural techniques in 2 villages (meeting with farmers and local organizations)	March 2010
University of Sydney, Australia Influence of the macronutrient intake on <i>Tenebrio molitor</i> immune response Supervision: Fleur Ponton, Steve Simpson	August 2009– February 2010

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. (2015) Characterisation of fourteen microsatellite markers for the Australian fig psyllid, *Mycopsylla fici*. *Australian Journal of Zoology (In press)*

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