

A PhD position is available for 3 years at the Laboratory of Experimental and Comparative Ethology (LEEC, University Paris 13, France).

Phylogeography of the Neotropical soil-feeding termite *Embiratermes neotenicus* (Termitidae, Syntermitinae) in South America

Soil-feeding species occur in several lineages of Termitidae (most evolved termite family) and represent over one-third of all described termite species. Soil feeders are especially abundant and diversified in humid tropical forests, where they largely contribute to the soil humification process. It was proposed that soil feeders were poor passive dispersers over water gaps because their colonies are usually located in the soil or soil-made nests and are unlikely to raft over water gaps, contrary to wood feeders frequently drifting in wood pieces. Up to date, only two genetic study investigated the dispersal potential of alates in soil feeders in pristine habitats, i.e. Fournier et al. (2016) in *Cavitermes tuberosus* and Fougeyrollas et al. (2018) in *Embiratermes neotenicus* and *Silvestritermes minutus*. Beside their typical soil-feeding ecology, our interest in these two last species was further prompted by their unusual breeding system: asexual queen succession. In this system, the founding primary queen is replaced by numerous neotenic daughters arising through thelytokous parthenogenesis. The neotenic then take over the reproduction of the colony and mate with the founder king. While the breeding system of *E. neotenicus* is now well known, the reproduction of colonies, i.e. the dispersal and mating strategies, remain to be investigated at a large scale, i.e. in South America where this species occurs. Therefore, we aim to study population genetics and phylogeography (i.e. study of the principles and processes governing the geographical distributions of genealogical lineages, including those at the intraspecific level) of *Embiratermes neotenicus* in South America. Molecular analyses will be performed on samples collected in many different countries from South America. This will allow us:

- (1) to determine whether it includes genetically and geographically distinct lineages,
- (2) to elucidate its demographic history (diversification events),
- (3) to infer biogeographic scenarios.

We are seeking a highly motivated candidate with a Master degree in a relevant area (ethology, behavioral ecology, genetics or entomology). We expect successful candidates to write scientific papers on the project in internationally peer-reviewed journals, and to present the research at national and international meetings. Working language is French or English. Possibility of doing teaching in French only.

Please submit your application (CV + motivation letter + contacts of two potential referees, pdf format) to both D. Sillam-Dussès (sillamdusses@univ-paris13.fr) and V. Roy (roy@upec.fr) until May 20th, 2019.

Relevant publications

Fougeyrollas R, Dolejšová K, Sillam-Dussès D, Roy V, Hanus R, Roisin Y (2015) Asexual queen succession in the higher termite *Embiratermes neotenicus*. Proc R Soc Lond B Biol Sci 282:20150260.

Fougeyrollas R, Křivánek J, Roy V, Dolejšová K, Frechault S, Roisin Y, Hanus R, Sillam-Dussès D (2017) Asexual queen succession mediates an accelerated colony life cycle in the termite *Silvestritermes minutus*. Mol Ecol 26:3295–3308.

Fougeyrollas R, Dolejšová K, Křivánek J, Sillam-Dussès D, Roisin Y, Hanus R, Roy V (2018) Dispersal and mating strategies in two neotropical soil-feeding termites, *Embiraetermes neotenicus* and *Silvestritermes minutus* (Termitidae, Syntermitinae). *Insectes Sociaux*. 65:251-262.

Fournier D, Hellemans S, Hanus R, Roisin Y (2016) Facultative asexual reproduction and genetic diversity of populations in the humivorous termite *Cavitermes tuberosus*. *Proc R Soc Lond B Biol Sci* 283:20160196