

Supervision :

Surname: Perrot-Minnot Cézilly First name: Marie-Jeanne (mjperrot@u-bourgogne.fr)
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Funding for student:

X yes to be discussed no

Title of the research project:

**The ontogenesis of behavioural changes induced by
an acanthocephalan parasite in its amphipod host**

Key words:

parasitic manipulation – multiple behavioural traits

Brief description:

Multidimensionality in host manipulation by parasites is now widely acknowledged, in particular in parasites with complex life cycle and trophic transmission (1). Interestingly, several lines of evidence point to differential effects of the parasite on the behavior of its host according to its own developmental stage, with possible adaptive implications (2).

This research project aims at characterizing the behavioral changes induced by the fish parasite *Pomphoerythrus laevis* throughout its development (i.e. ontogeny of manipulation), in *Gammarus sp.*, on a set of behavioral traits with survival and reproductive functions. In addition, we will investigate the neurophysiological correlates of these behavioral changes, as candidate pathways to parasitic manipulation.

Literature (2 references):

Cézilly, F., Favrat, A., Perrot-Minnot, M.-J. 2013. Multidimensionality in parasite-induced phenotypic alterations: ultimate versus proximate aspects. *J. Exp. Biol.* 216, 27-35.

Dianne, L., Perrot-Minnot, M.-J., Bauer, A., Gaillard, M., Léger, E., Rigaud T. 2011. Protection first then facilitation: a manipulative parasite modulates the vulnerability to predation of its intermediate host according to its own developmental stage. *Evolution*, 65:2692-2698.

Technical aspects of the research project:

Collecting samples in the field, dissecting, conducting behavioural experiments under controlled conditions, DNA extraction and amplification

Essential skills and abilities desired:

Good command of English language, organizational and observation skills, adroitness. Interest in the mechanistic basis of behaviour at the physiological level is mandatory

Return to Professor Frank Cézilly (frank.cezilly@u-bourgogne.fr) and Dr Marie-Jeanne Perrot-Minnot (mjperrot@u-bourgogne.fr)