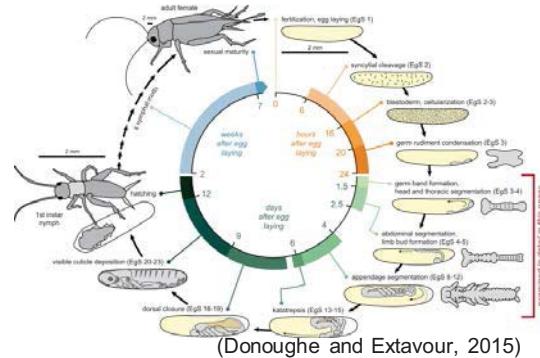


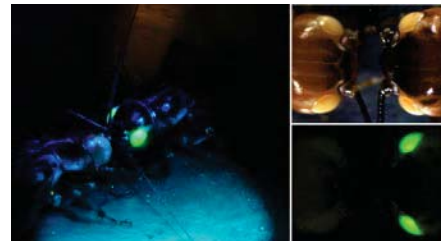
Life cycle of a cricket



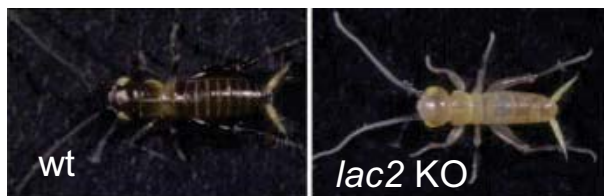
Leg regeneration in a cricket nymph



Transgenesis in crickets



Gene knockout using genome editing



We have been studying on developmental and regeneration mechanisms and their evolution, using an insect model system. The two spotted cricket *Gryllus bimaculatus* is a principal model species in our study. We are conducting whole genome sequencing of this species as well as developing techniques for genome function analysis.

We have successfully introduced RNA-interference, transgenic, and genome-editing technologies into the cricket system. Using the genome-editing technology, greatly sophisticated genome modification is becoming possible.

Using the above technologies, we aim to reveal molecular mechanisms of morphogenesis in developmental and regeneration processes. Making disease model insects and application to regenerative medicine are also included in our future plans.

Keywords: genome modification, morphogenesis, Insect model

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