

Laurent Penet

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Experience

05-07 Post-doctorate on the "Role of herbivory in evolution of sex towards dioecy in *Fragaria virginiana*", supervisor Dr T.-L. Ashman. Pittsburgh University. Paternity analyses, natural selection, field experiments, microsatellites, supervision of undergraduate students, in charge of bio-mol lab, DNA stocks, growth chambers.

01-04 PhD on the "Evolution of pollen grain morphology in Angiosperms: natural selection or developmental constraints?", supervisor Pr P.-H. Gouyon. Laboratory Ecologie, Systématique, Evolution, University Paris XI. Comparative analyses and phylogeny, paternity analyses, confocal and epifluorescent microscopy, microsatellites.

2001 Engineer position, "Study of At-FstZ gene", supervisor Dr C. Bergounioux. CNRS, Cell Division Lab, Institute of Plant Biotechnology. Cloning, genetic constructions.

99-01 National Service as scientist, "Quantitative genetics and breeding for growth in the shrimp *Penaeus stylirostris*", supervisor E. Goyard. IFREMER, Centre Océanographique du Pacifique, Tahiti. Zootechny and breeding program, study of shrimp growth, in charge of maintaining wild strains.

1999 M.Sc. in Biology (DEA) "Impact of traditional cultural practices on local genetic diversity of cassava varieties in a village of Guyana", supervisors Pr A. Sarr and Dr T. Robert. Laboratory ESE. Population genetics, genetic resources, microsatellites.

Teaching & other scientific activities

2007 Organization of the Lab Journal Club (devised for undergraduate students).

2006 Supervision/management of undergraduate students: Dennis Royer (molecular techniques from sampling to genotyping, introduction to population genetics, and analyses of population structure); Andrew Krieger (literature review on concepts of inbreeding depression, bibliography search, and conceptual maps); Katrina Kurtz & Michelle Echko (DNA extraction and PCRs).

2005 Lecture on the Evolution of sex - (30 M.Sc. students, 4h), University Paris XI.

2005 Teaching class and exercises on Population genetics - (50 undergraduate students, 8h), University Paris XIII.

2004 Assistant-editor for the journal *Acta Oecologica*, *International Journal of Ecology*, editor-in-chief Pr R. Arditi. Management of manuscripts, and communication with authors (6 months).

2003 « Fête de la Science », Laboratory Ecologie, Systématique et Evolution. Public science manifestation: "Diversity of pollen grains and steps of microsporogenesis".

97-98 Class support and working methods for undergraduate students, University Paris XI.

Reviewer for *Plant Breeding* (2005), *SABRAO - Journal of Breeding and Genetics* (2005), *Annals of Botany* (2006), *Acta Oecologica* (2007) and co-reviewer for *New Phytologist* (2007).

Publications

- **Penet L.**, M. Laurin, P.-H. Gouyon, and S. Nadot (2007). Developmental constraints and selection: insights from microsporogenesis in Asparagales. *Evolution and Development* 9 (5): 460-471.
- Ashman T-L and **L. Penet** (2007). Direct and indirect effects of a sex-biased antagonist on male and female fertility: consequences for reproductive trait evolution in a gynodioecious plant. *American Naturalist* 169(5): 595-608.
- S. Nadot, A. Forchioni, **L. Penet**, J. Sannier, and A. Ressayre (2006). Links between early pollen development and aperture pattern in monocots. *Protoplasma* 228: 55-64.
- **Penet L.**, S. Nadot, A. Ressayre, A. Forchioni, L. Dreyer, and P.-H. Gouyon (2005). Multiple developmental pathways leading to a single morph : monosulcate pollen (Examples from the Asparagales). *Annals of Botany* 95: 331-343.
- Elias M., **L. Penet**, P. Vindry, D. McKey, O. Panaud, and T. Robert (2001). Unmanaged sexual reproduction and the dynamics of genetic diversity of a vegetatively propagated crop plant, cassava (*Manihot esculenta* Crantz), in a traditional farming system. *Molecular Ecology* 10: 1895-1907.

In preparation:

- **Penet L.**, C. L. Collin, and T.-L. Ashman. Impact of a weevil herbivore on the mating system of the wild strawberry *Fragaria virginiana*. (Submitted to *Plant Biology*).
- Nadot S., C.A. Furness, J. Sannier, **L. Penet**, S. Triki-Teurtroy, B. Albert and A. Ressayre. Phylogenetic comparative analysis of microsporogenesis in angiosperms with a focus on monocots. (Soumis to *American Journal of Botany*).
- **Penet L.**, M. Laurin, and S. Nadot. Tetrad shape diversity in Higher Asparagales.
- **Penet L.**, C. L. Collin, and T.-L. Ashman. Impact of clonality on mating systems: an experimental study in *Fragaria virginiana*.

Book chapter:

- Giraud T., **Penet L.**, In press. Le sexe, source de diversité : la reine rouge. pp.xxx in P.H. Gouyon & H. Trubert (eds.) Aux origines du sexe. Fayard.

Seminars and Symposia

- **L. Penet**. Les hermaphrodites chez le fraisier de Virginie: Pour ou Contre? Le point de vue d'un charançon... Lab. de Génétique & Evolution des Populations Végétales. Lille (Fr), March 2007.
- **L. Penet**. Morphological consequences of constraints and selection on pollen morphology. Ecology and Evolution Seminars, Biological Sciences, University of Pittsburgh, October 2006.
- **L. Penet**, P.-H. Gouyon, and S. Nadot. The « developmental constraints versus selection » debate : insights from Asparagales. ESEB X, Krakow, Poland, August 2005.
- **L. Penet**, and Pollen Group of Orsay. La microsporogénèse chez les Asparagales. Seminars from the Lab Ecologie, Systématique, Evolution, May 2003.

Posters

- **Penet L.**, C. L. Collin, and T.-L. Ashman. Impact of a weevil herbivore on the mating system of the wild strawberry *Fragaria virginiana*. Biological Sciences Department Retreat, Pymatuning Laboratoire of Ecology, September 2006. (**Poster**) Also presented at "Science 2006: Feel the power" (Public symposia organized by the University of Pittsburgh), October 2006.
- Ressayre A., S. Nadot, B. Albert, **L. Penet**, A. Forchioni, and P.-H. Gouyon. The evolution of pollen morphology in Angiosperms: Developmental study of aperture pattern, a discrete but complex character. ESEB IX, Leeds, UK, August 2003. (**Poster**)
- **Penet L.**, B. Albert, A. Forchioni, C. Raquin, A. Ressayre, P.-H. Gouyon, and S. Nadot. Evolution de la morphologie du pollen chez les Asparagales. 3ème Symposium de Morphologie et Evolution des Formes, Paris, France, March 2003. (**Poster**)
- **Penet L.**, E. Goyard, L. Chim, G. Cuzon, D. Bureau, E. Bédier, and AQUACOP. Testing of two strains of *Penaeus stylirostris* after six generations of selection for growth and correlative responses on other traits. World Aquaculture 2001, Lake Buena Vista, Florida, January 2001. (**Poster**)

Other Publications

- Ashman T.-L., C. L. Collin, and **L. Penet** (2006). Sex, Plants, and ESS. Review of Evolutionary ecology of plant reproductive strategies by T. De Jong and P. Klinkhamer, 2005. *Ecology* 87: 2406-2407. (**Book review**)
- Nadot S., **L. Penet**, L. Dreyer, A. Forchioni, and A. Ressayre. Aperture pattern and microsporogenesis in Asparagales. In *Monocots: Comparative Biology and Evolution*. Columbus J.T., E. A. Friar, C. W. Hamilton, J. M. Porter, L. M. Prince, and M. G. Simpson (eds). Rancho Santa Ana Botanical Garden. (**Symposium report**, peer-reviewed)
- Goyard E., E. Bédier, J. Patrois, V. Vonau, D. Pham, G. Cuzon, L. Chim, **L. Penet**, T. Dao, P. Boudry, and AQUACOP. Synthèse des travaux de génétique crevette menés à Tahiti : quel bénéfice pour la filière calédonienne ? - Research in genetics of shrimps in Tahiti: what benefits for the New Caledonian shrimp industry? Styli 2003. (**Symposium report**)
- Goyard E., **L. Penet**, L. Chim, G. Cuzon, D. Bureau, E. Bédier, and AQUACOP 2002. Selective breeding of the Tahitian domesticated population of Pacific blue shrimp (*Litopenaeus stylirostris*): Perspectives for the New Caledonian shrimp industry. *World Aquaculture Magazine*, vol. 33 (**Professional popularization**)
- Goyard E., **L. Penet**, L. Chim, G. Cuzon, D. Bureau, E. Bédier, and AQUACOP 2001. Genetic improvement of *Penaeus stylirostris* for growth and correlative responses on other traits. *Global Aquaculture Advocate*, 4: 31-32. (**Professional popularization**)