T +1 510 326 2436

CURRICULUM VITAE OF

VINCENT S.F.T. MERCKX

April 2009

PROFESSIONAL STATUS

Postdoctoral Fellow
University of California at Berkeley
Department of Plant and Microbial Biology
321 Koshland Hall
Berkeley, CA 94720-3102
USA

AWARDS AND HONORS

University of Leuven, Belgium
Postdoctoral Fellowship, 2009-2010

Belgian American Educational Foundation
Postdoctoral Fellowship, 2008-2009

Stichting het Van Eeden Fonds
Travel grant for field work in French Guiana, 2008

Fund for Scientific Research Flanders (FWO Vlaanderen)
Travel grant, 2008

Apple Inc.
Student scholarship for WWDC 2006, 2007, 2008

Institute for the Promotion of Innovation by Science and Technology in Flanders
Graduate Research Fellowship, 2004-2007
Laboratory of Plant Systematics, K.U. Leuven, Belgium

RESEARCH

POSTDOCTORAL FELLOW
University of California, Berkeley *November 2008 - September 2009*
Host: Prof. Tom Bruns

My postdoctoral research at the Bruns lab focusses on the identification of arbuscular mycorrhizal fungi in the roots of myco-heterotrophic Burmanniaceae, Triuridaceae, and Gentianaceae. The results will show the degree of specialization of these plants on particular lineages of arbuscular mycorrhizal fungi. I am also building phylogenetic hypotheses for both Triuridaceae and Gentianaceae, and improving the available Burmanniaceae phylogeny. These results will allow us to discuss the mycorrhizal specialization process of tropical myco-heterotrophic plants in an evolutionary and biogeographical context. In addition, I started editing a book on myco-heterotrophic flowering plants.

POSTDOCTORAL FELLOW
Laboratory of Plant Systematics, K.U. Leuven, Belgium *May 2008 - October 2008*
Host: Prof. Erik Smets

My postdoctoral work at the Laboratory of Plant Systematics mainly consisted of compiling scientific papers of the results obtained during my Ph.D. research. I also initiated phylogenetic research on myco-heterotrophic Triuridaceae and Gentianaceae by testing the utility of candidate DNA regions.

GRADUATE STUDENT
Laboratory of Plant Systematics, K.U. Leuven, Belgium *2003-2008*
Advisor: Prof. Erik Smets

My work as an undergraduate student at the Laboratory of Plant Systematics focussed on the phylogenetic relationships of Burmanniaceae, a small monocot family that contains mainly myco-heterotrophic species. By sequencing nuclear and mitochodrial DNA sequences of Burmanniaceae and related Dioscoreales taxa I was able to build solid hypotheses of the evolutionary history of the Burmanniaceae and showed that the

Thismiaceae, a group formerly included in Burmanniaceae, is a distinct family. Molecular clock methods allowed to reconstruct the diversification and biogeographic history of Burmanniaceae. Based on these results I proposed a new taxonomic classification of Dioscoreales.

Undergraduate Student
Laboratory of Plant Systematics, K.U.Leuwen, Belgium *2002-2003*
Advisors: Prof. Erik Smets, Dr. Peter Schols

During my undergraduate research I inferred the phylogenetic relationships in Nartheciaceae using plastid gene sequences. I also studied the pollen and orbicule morphology of this family.

EDUCATION

University of Leuven, Belgium
Ph.D., May 2008

University of Leuven, Belgium
Master of Biology, July 2003 – magna cum laude

University of Leuven, Belgium
Bachelor of Biology, July 2001 – cum laude

PUBLICATIONS

Janssens, S.B., Knox, E.B., Huysmans, S., Smets, E.F. and V. Merckx (accepted) Rapid radiation of *Impatiens* (Balsaminaceae) during Pliocene and Pleistocene: Result of a global climate change. *Molecular Phylogenetics and Evolution* SCI 2007: 3.994

Merckx, V., Bakker, F., Huysmans, S. and E. Smets (2009) Bias and conflict in phylogenetic inference of myco-heterotrophic plants: a case study in Thismiaceae. *Cladistics* 25: 64-77. SCI 2007: 4.642

Merckx, V., Chatrou, L.W., Lemaire, B., Sainge, M., Huysmans, S. and E. Smets (2008) Diversification of myco-heterotrophic angiosperms: evidence from Burmanniaceae. *BMC Evolutionary Biology* 8: 178. SCI 2007: 4.091 [Highly Accessed]

Merckx, V. and M.I. Bidartondo (2008) Breakdown and delayed cospeciation in the arbuscular mycorrhizal mutualism. *Proceedings of the Royal Society B: Biological Sciences* 275: 1029-1035. SCI 2007: 4.112

Merckx, V., Schols, P., Geuten, K., Huysmans, S. and E. Smets (2008) Phylogenetic relationships in Nartheciaceae (Dioscoreales), with focus on pollen and orbicule morphology. *Belgian Journal of Botany* 141: 64-77. SCI 2007: 0.233

Merckx, V., Schols, P., Maas-van de Kamer, H., Maas, P., Huysmans, S. and E. Smets (2006) Phylogeny and evolution of Burmanniaceae (Dioscoreales) based on nuclear and mitochondrial data. *American Journal of Botany* 93: 1684-1698. SCI 2007: 2.512

Bakker, F.T., Breman, F. and V. Merckx (2006) DNA sequence evolution in fast evolving mitochondrial DNA nad1 exons in Geraniaceae and Plantaginaceae. *Taxon* 55: 887-896. SCI 2007: 2.524

Schols, P., Furness, C., Merckx, V., Wilkin, P. and E. Smets (2006) Comparative pollen development in Dioscoreales. *International Journal of Plant Sciences* 166: 909-924. SCI 2007: 1.590

Schols, P., D'hondt, C., Geuten, K., Merckx, V., Janssens, S. and E. Smets (2004) MorphoCode: coding quantitative data for phylogenetic analyses. *Phyloinformatics* 4: 1-4. SCI 2007: --

Schols, P., Es, K., D'hondt, C., Merckx, V., Smets, E. and S. Huysmans (2004) A new enzyme-based method for the treatment of fragile pollen grains collected from herbarium material. *Taxon* 53: 777-782. SCI 2007: 2.524

MANUSCRIPTS SUBMITTED

Merckx, V., Bidartondo, M.I. and N.A. Hynson. Myco-heterotrophy: when fungi host plants. *Annals of Botany*

Merckx, V., Janssens, S.B., Casteels, J., Fouret, S. and M. Jocqué. Myco-heterotrophic plant diversity 'hotspots': an overview and the recognition of a new site in French Guiana. *Biodiversity and Conservation*

Merckx, V., Huysmans, S. and E. Smets. Cretaceous origins of mycoheterotrophy in Dioscoreales. Proceedings of the IV Monocots Conference. Aarhus University Press, Copenhagen.

ABSTRACTS

Merckx, V., Huysmans, S. and E. Smets (2008) Cretaceous origins of mycoheterotrophy in Dioscoreales. In: The fourth international conference on the comparative biology of the Monocotyledons, 11-15 August 2008. Copenhagen, Denmark. 100 p.

Groeninckx, I., Merckx, V., De Block, P., Smets, E. and S. Dessein (2008) Multidisciplinary approach traces the biogeographic origin and evolution of Madagascar's Spermacoceae. In: IV International Rubiaceae (Gentianales) Conference: 33. Scripta Botanica Belgica 44. National Botanic Garden (Belgium), Meise. 88 p.

Lemaire, B., De Block, P., Lachenaud, O., Merckx, V., Smets, E. and S. Dessein (2008) Bacterial leaf symbiosis in Rubiaceae: distribution, characterization, and evolution. In: IV International Rubiaceae (Gentianales) Conference. Programme and Abstracts: 40. Scripta Botanica Belgica 44. National Botanic Garden (Belgium), Meise. 88 p.

Merckx, V., Huysmans, S. and E. Smets (2007) Phylogenetic relationships in Dioscoreales. In: The sixth biennial conference of the Systematics Association, 23 - 31 August 2007. Royal Botanic Gardens Edinburgh. Abstracts: 39. Edinburgh. 71 p.

Merckx, V., Schols, P., Huysmans, S. and E. Smets (2007) Reconstructing plant evolution: Darwin's legacy comes alive with Mac OS X. In: Apple Worldwide Developers Conference, 11-15.06.2007. Moscone West, San Francisco, U.S.A.

Merckx, V., Sainge, M., Franke, T. and E. Smets (2007) The affinities of the African myco-heterotrophic genus Afrothismia Schltr. (Burmanniaceae). In: XVIIIth AETFAT Congress, 26 February - 2 March, Cameroon. Abstracts: 38. Yaoundé, Cameroon. 196 p.

Merckx, V., Huysmans, S. and E. Smets (2007) Towards a light-independent life: molecular phylogenetics of the mycoheterotrophic Burmanniaceae. In: Abstracts of the Young Botanists Day 2006 "Tropical botany in the Benelux". Belgian Journal of Botany 140: 252.

Merckx, V., Schols, P., Maas, P., Maas-van de Kamer, H. and E. Smets (2005) Phylogeny of Burmanniaceae: preliminary results based on 18S rDNA sequences. In: XVII International Botanical Congress. 459. Vienna, Austria. 728 p.

Bakker, F., Breman, F. and V. Merckx (2005) Exceptionally high substitution rates in Geraniaceae and Plantaginaceae mitochondrial DNA nad exon regions. In: XVII International Botanical Congress. Abstracts: 196. Vienna, Austria. 728 p.

BOOKS

Merckx, V. (editor, in prep) Myco-heterotrophic flowering plants. Springer, New York

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OTHER PUBLICATIONS	Merckx, V. (2008) Speuren naar nieuwe plantensoorten in het regenwoud. Science@Leuven 21: 17-19
	Merckx, V. (2008) Elfenlantaarntjes. De Standaard, 14 February 2008.
	Merckx, V. (2008) Mycologie: schimmels steunen planten. Knack, 26 March 2008
	Merckx, V. (2006) Saprofyten. Onder het Palmblad 9: 15-17.
SERVICE	Co-founder and Secretary of the non-profit organization Biodiversity Inventory for Conservation (BINCO vzw), 2007 - current
	Webmaster for Biodiversity Inventory for Conservation, www.binco.eu, 2007 - current
	Webmaster for www.burmanniaceae.org, 2006 - current
	Ad hoc reviewer for Systematic Biology, Botanical Journal of the Linnean Society, Plant Biology, Journal of Systematics and Evolution, Thai Forest Bulletin
	Ad hoc beta-testing for Orbicule Inc.
TEACHING EXPERIENCE	Undergraduate course: Cladistics, K.U. Leuven, 2008
	Undergraduate course: Plant identification and the use of a flora, K.U. Leuven, 2006 - 2007
SUPERVISED THESES	Lemaire, B. (2007) Substitutiesnelheden in het 18S rDNA van mycoheterotrofe angiospermen. Master thesis. Instituut voor Plantkunde en Microbiologie, K.U.Leuven.
FIELD EXPERIENCE	French Guiana and Guyana, August 2005
	Cameroon, September 2006
	French Guiana, August 2008
SKILLS	Phylogenetic software: BEAST, MrBayes, Modeltest, PAUP, MacClade, r8s, Multidivtime, Genie, Phylogen, GARLI, RAxML, PhyML, Staden, MorphoCode
	Other software: Adobe Photoshop, Adobe InDesign, Adobe Illustrator, MS Office, iWork
	Molecular techniques: DNA extraction, PCR, sequencing, cloning
	Languages: Dutch, English, French
SPECIAL TRAINING	International training on *in vitro* culture of arbuscular mycorrhizal fungi, Louvain-la-Neuve, Belgium 20-25 April 2008
	Advanced topics in phylogenetic analyses: Molecular clocks and dating methods. James Richardson, Leiden, the Netherlands, 25 February 2005
REFERRALS	Available upon request