

## Reza Zahiri

### CURRICULUM VITAE

#### Reza Zahiri, born 29.06.73

PhD candidate in Evolutionary Biology, Laboratory of Genetics, Department of Biology, University of Turku, FINLAND

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**Nationality:** Persian + permanent resident of Canada

#### RESEARCH INTERESTS

- Diversification of life on Earth, especially moth superfamily Noctuoidea (Insecta, Lepidoptera)
- Molecular phylogeny and systematic, higher-level phylogeny of Lepidoptera (in particular Noctuoidea) based on DNA sequence data
- Evolutionary history and biogeography of Noctuoidea

#### EDUCATION:

- 2008 to present **Ph.D.** student in Evolutionary Biology, Nymphalidae Systematics Group (NSG), Laboratory of Genetics, Department of Biology, University of Turku, Turku, FINLAND. Thesis titled "Molecular phylogenetics of the quadrifine Noctuoidea (Insecta: Lepidoptera)". Supervisor Dr. Niklas Wahlberg (University of Turku, Finland), advisers Dr. Donald Lafontaine (Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada); Dr Ian J. Kitching and Dr. Jeremy D. Holloway (Natural History Museum, London, UK).
- 2000–2003 **M.Sc.** in agricultural entomology, Guilan University, Rasht, IRAN. Thesis titled "A geometric morphometric investigation on geographic populations of Rice Stem Borer, *Chilo suppressalis* W. (Lep.: Pyralidae s.l.) in northern parts of Iran".
- 1992–1997 **B.Sc.** in plant protection (agricultural engineering), Shiraz Azad University, Shiraz, IRAN.

#### TRAINING COURSES:

- 2011 A training program on the higher-systematics of the moth superfamily Noctuoidea based on morphological characters in Ottawa (Canada) at the Canadian National Collection of Insects, Arachnids, and Nematodes (CNC) for one month (October 24 to November 22);
- 2010 Workshop on Molecular Evolution, Europe 2010, Cesky Krumlov, Czech Republic, 10–29 January;
- 2006 A training program on “The biodiversity data programme BIOOFFICE 2.0 and data exchange” 2006, Tiroler Landesmuseums Ferdinandeum, Innsbruck, Austria, 1 February–31 March;
- 2002 Workshop on “Multivariate Analysis and Geometric Morphometrics” IRIPP & Museum of Natural History of Paris, 31 August– 4 September.

## **WORK EXPERIENCE:**

- 2008 to present postgraduate student in evolutionary biology (Laboratory of Genetics, Department of Biology, University of Turku, Finland)
- 2007–2008 Curator of the Lepidoptera Collection (Hayk Mirzayans Insect Museum (HMIM), Insect Taxonomy Research Department (ITRD), Iranian Research Institute of Plant Protection (IRIPP), formerly Plant Pests & Diseases Research Institute (PPDRI), Tehran, IRAN)
- 2004–2007 Entomologist (ITRD, IRIPP)

## **PROFESSIONAL SKILLS:**

- **Molecular techniques**
  - DNA extraction, PCR, electrophoresis and DNA sequencing methods
- **Taxonomy and Systematics**
  - Taxonomy of Lepidoptera (Noctuoidea)
- **Geometric morphometric analysis**
- **Computer softwares and programmes**
  - **Phylogeny**
    - Familiar with TNT, MrBayes, Beast, BioEdit, Seaview, FigTree, Winclada, RAxML
  - **Data management**
    - BioOffice
  - **Geometric morphometrics**
    - TPS (*e.g.*, tpsDig, tpsRelw, tpsRegr)
- **Natural History Museums**
  - Studying lepidopteran materials of the following scientific collections:
    - Hayk Mirzayans Insect Museum (HMIM), Tehran, Iran
    - the Canadian National Collection of Insects, Arachnids, and Nematodes (CNC), Ottawa, Canada
    - Naturhistorisches Museum Wien (Vartian Collection), Vienna, Austria
    - Zoologische Staatssammlung München (ZSM), Munich, Germany
    - Museum Witt of ZSM, Munich, Germany
    - Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany
    - Staatliches Museum für Naturkunde Karlsruhe, Karlsruhe, Germany

- Tiroler Landesmuseums Ferdinandeum, Innsbruck, Austria
- Swedish Museum of Natural History, Stockholm, Sweden

## AWARDS & GRANTS:

- 01.01.2012 to 30.06.2012 Alfred Kordelin Foundation (€1000)
- 01.03.2010 to 01.03.2011 Finnish Cultural Foundation (€21000)
- 01.01.2009 to 30.04.2009 CIMO (the Centre for International Mobility under the Finnish Ministry of Education) scholarship for international students for PhD studying at the University of Turku, Finland (supported by Dr. Niklas Wahlberg, €4,800).
- 01.05.2008 to 31.12.2008 CIMO (the Centre for International Mobility under the Finnish Ministry of Education) scholarship for international students for PhD studying at the University of Turku, Finland (supported by Dr. Niklas Wahlberg, €9,600).
- 2006 Entomology and Lepidopterology travel grant to Museum für Naturkunde Karlsruhe, Germany (SMNK), for attending third A.L.I. annual meeting (supported by Association Lepidoptera Iranica, €500).
- 2006 Entomology and Lepidopterology travel grant to Tiroler Landesmuseen Ferdinandeum, for attend (2 month) to the training programme on “The biodiversity data programme BIOOFFICE 2.0 and data exchange”, Innsbruck, Austria (supported by Prof. Dr. Gerhard Tarmann, €1,500).

## PUBLICATIONS:

- **Zahiri, R.**, Lafontaine, J.D., Kitching, I.J., Holloway, J.D., Schmidt, B.C., Mutanen, M., & Wahlberg, N. Relationships of the early lineages of Noctuidae (Lepidoptera, Noctuoidea) based on eight gene regions. *Manuscript*.
- **Zahiri, R.**, Lafontaine, J.D., Holloway, J.D., Kitching, I.J., Schmidt, B.C., Kaila, L., & Wahlberg, N. Major lineages of Nolidae (Lepidoptera, Noctuoidea) elucidated by molecular phylogenetics. *Submitted Manuscript*.
- Zaspel, J.M., **Zahiri, R.**, Hoy, M.A., Janzen, D., Weller, S.J. & Wahlberg, N. A molecular phylogenetic analysis of the vampire moths and their fruit-piercing relatives based on molecular data (Lepidoptera: Erebidae: Calpinae). *Submitted manuscript*.
- **Zahiri, R.**, J.D. Holloway, I.J. Kitching, D. Lafontaine, M. Mutanen & Wahlberg, N. 2011 Molecular phylogenetics of Erebidae (Lepidoptera, Noctuoidea). *Systematic Entomology* **37**, 102–124.
- Yela, J.L. & **Zahiri, R.** 2011 Phylogenetic overview of Noctuidae sensu lato. *Noctuidae Europaeae, Volume 13 Lymantriinae and Arctiinae, including phylogeny and checklist of the quadrid Noctuoidea of Europe* (ed. by Witt, T.J. & Ronkay, L.), pp. 119–124. SvendborgTryk, Svendborg, Denmark, ISBN: 978–87–89430–17–1.
- **Zahiri, R.**, I.J.Kitching, D. Lafontaine, M. Mutanen, L. Kaila, J.D. Holloway, & N. Wahlberg 2011 A new molecular phylogeny offers hope for a stable family-level classification of the Noctuoidea (Lepidoptera). *Zoologica Scripta*, 40 (2), 158–173. DOI: 10.1111/j.1463-6409.2010.00459.x.
- van Nieukerken, E. J., Kaila, L., Kitching, I. J., Kristensen, N. P., Lees, D. C., Minet, J., Mitter, C., Mutanen, M., Regier, J. C., Simonsen, T. J., Wahlberg, N., Yen, S.-H., **Zahiri, R.**, Adamski, D., Baixeras, J., Bartsch, D., Bengtsson, B. Å., Brown, J. W., Bucheli, S. R., Davis, D. R., De Prins, J., De Prins, W., Epstein, M. E., Gentili-Poole, P., Gielis, C., Hättenschwiler, P., Hausmann, A., Holloway, J. D., Kallies, A., Karsholt, O., Kawahara, A., Koster, S. J. C., Kozlov, M., Lafontaine, J. D., Lamas, G., Landry, J.-F., Lee, S., Nuss, M., Penz, C., Rota, J., Schmidt, B. C., Schintlmeister, A., Sohn, J. C., Solis, M. A., Tarmann, G. M., Warren, A. D., Weller, S., Yakovlev, R., Zolotuhin, V. & Zwick, A. 2011 Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. *Zootaxa* **3148**: 212–221.

- Khaghaninia, S., S. A. Mohammadi, A. M. Srafrazi, K. H. Irani Nejad, **R. Zahiri** 2011 Geometric morphometric study on geographic dimorphism of Codling moth *Cydia pomonella* (Lepidoptera, Tortricidae) from North West of Iran. *Vestnik zoologii* in press.
- Lehmann, L. & **Zahiri, R.** 2011 Results of a lepidopterological expedition to North and Northwest Iran in summer 2007 with new records for Iran (Lepidoptera). *ESPERIANA Buchreihe zur Entomologie* **16**: 135–165.
- Khaghaninia S., S.A. Mohamadi, A. Sarafrazi, K. Hadade Iraninejad and **R. Zahiri** 2011 Thin-Plate Spline Analysis of Diversity in Field Populations of Codling Moth, *Cydia pomonella* L. (Lep., Tortricidae) in North West of Iran. *Journal of Agricultural Science and Technology* **5(1)**: 35–41.
- Zolotohin, V.V., Saldaitis, A. and **Zahiri, R.** 2010 Two new mountain species of the genus *Poecilocampa* Stephens 1828 (Lasiocampidae). *TINEA* **21(2)**:88–94.
- Lehmann L., D. Stadie & **R. Zahiri** 2009 Zum Winteraspekt der Makrolepidopterenfauna Südiran mit Anmerkungen zur Biologie einiger Arten (Lepidoptera: Bombycoidea, Papilionoidea, Geometroidea, Noctuoidea). *Nachrichten des Entomologischen Vereins Apollo* **30(3)**:105–119.
- Khaghaninia S., S.A. Mohamadi, A. Sarafrazi, K. Hadade Iraninejad, E. Ebrahimi, S. Alavikia and **Zahiri R.** 2008 Geometric morphometric approach on the sexual dimorphism of *Cydia pomonella* (Lep.: Tortricidae) in the North West of Iran. *Journal of Entomological Society of Iran* **28** (1): 51–62.
- **Zahiri R.** & M. Fibiger 2008 The Plusiinae of Iran (Lepidoptera: Noctuidae). *SHILAP Revista de lepidopterología* **36** (143) 301–339.
- Zolotuhin V. & **R. Zahiri** 2008 The Lasiocampidae of Iran (Lepidoptera). *Zootaxa* **1791**: 1–52.
- Matov A., **R. Zahiri** & J.D. Holloway 2008 The Heliethinae of Iran (Lepidoptera: Noctuidae). *Zootaxa* **1763**: 1–37.
- Müller G. C., V.D. Kravchenko, T.J. Witt, A. Junnila, J. Mooser, A. Saldaitis, K. Reshöft, P. Ivinskis, **R. Zahiri** & W. Speidel 2008 New Underwing taxa of the group of *Catocala lesbia* Christoph, 1887 (Lepidoptera, Noctuidae). *Acta zoologica Lituanica* **18** (1) 30–49.
- Fibiger M., G. Stangelmaier, C. Wieser & **R. Zahiri** 2008 *Dichonia jahannamah*, a new species from Iran in the subgenus *Griposia* Tams, 1939 (Lepidoptera, Noctuidae, Xyleninae). *Nachrichten des Entomologischen Vereins Apollo* **28** (3/4) 121–124.
- Kitching I.J. & **R. Zahiri** 2007 Taxonomic notes and new records of the Genus *Sphingonaepiopsis* Wallengren, 1858 (Lepidoptera: Sphingidae) of Iran. *Zootaxa* **1610**: 41–52.
- Fibiger M., **R. Zahiri** & V. Kononenko 2007 Description of a new species of the Central Palaearctic genus *Margelana* Staudinger (Lepidoptera: Noctuidae) from northeastern Iran. *Zootaxa* **1503**: 13–19.
- **Zahiri R.**, B. Plössl and G. Tarmann 2007 *Ctenoplusia vittata* (Wallengren, 1856) (Lep.: Noctuidae: Plusiinae) a new genus and species record for Iran. *Zoology in the Middle East* **40**: 115.
- Fibiger M. & **R. Zahiri** 2007 A new species of *Gortyna* Ochsenheimer, 1816 from Golestan forests of Iran (Lepidoptera: Noctuidae). *Nota Lepidopterologica* **29**: 215–220.
- **Zahiri R.**, Sarafrazi A. M., Salehi L. & Kunkel J. 2006 A Geometric Morphometric Study on Populations of Rice Stem Borer, *Chilo suppressalis* W. (Lep.: Crambidae) in northern Iran. *Zoology in the Middle East* **38**: 73–84.
- **Zahiri R.**, M. Fibiger 2006 A new *Amphipoea* Billberg, 1820 from northwestern Iran (Lepidoptera: Noctuidae). *Zootaxa* **1244**: 33–39.
- Fibiger, M. and **Zahiri, R.** 2005 Describe a new species of Noctuidae: Xyleninae: *Luperina farsiensis* Fibiger & Zahiri, sp. n. In: Zilli, A., Ronkay, L. & Fibiger, M. (ed.). *Noctuidae Europaeae. Volume 8 Apameini*. pages 68, 196–197, 230, 272, Entomological Press, Sorö.
- Dubatolov, V.V. and **Zahiri, R.** 2005 Tiger-moths of Iran (Lepidoptera, Arctiidae: Arctiinae). *Atalanta* (Marktleuthen) **36**:481–525.

## PROJECTS:

### Lepidoptera phylogeny

- **Completed**
  - 2008–2010: Molecular phylogenetics of Noctuoidea (Insecta: Lepidoptera)
  - 2009–2011: Molecular phylogenetics of Erebidae (Lepidoptera: Noctuoidea)
  - 2010–2011: Phylogeny of the vampire moths and their fruit-piercing relatives based on molecular data (Erebidae: Calpinae)
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- **Ongoing**
  - 2011–2012: Molecular phylogenetics of Nolidae (Lepidoptera: Noctuoidea)
  - 2011–2012: Molecular phylogenetics of Noctuidae (Lepidoptera: Noctuoidea)
- **Future (2012)**
  - Evolutionary history of Noctuoidea (Insecta: Lepidoptera)
  - Evolutionary history of Erebidae (Noctuoidea)

### **Lepidoptera classification**

- **New Classification of Lepidoptera Families** (leded by Dr. Erik J. van Nieuwerkerken)

### **PERSONAL INTERESTS:**

- Nature and adventure vacations: expedition trips in nature in particular for moth collecting
- driving
- sport: basketball, biking, jogging

### **SYNOPSIS OF INTEREST:**

- The main theme of my research program is improving our understanding reasons and causes of diversification of life on Earth. To address this big question, I am using moth superfamily Noctuoidea as my model system to determine where, when and how the major groups of noctuid moths have diverged and evolved.
- I am particularly enthusiastic about and interested in discovering explanations for this remarkable diversity of herbivorous insects; determining patterns of diversification and plausible explanations for the differences in diversity among the various groups within Noctuoidea; discovering whether major climatic changes and mass extinction events over geological time scales may have had a major impact on the diversification of this mega-diverse group of Lepidoptera; and eventually inferring a scenario of the evolutionary history and biogeography of the noctuoids, based on all available data, including morphology and DNA sequences, ecological traits (including larval host-plant associations), geographical distributions, and geological and paleontological information.