

**Annual report 2008, Naturalis Research
Department of Zoology ('Overige Zoologie') - Reptiles and Amphibians**

Staff

Researcher / Curator:

Arntzen, Dr. J. W. (Pim)

Associates:

Bickham-Baird, Dr. A. (Amy)

Ross, F. D. (Franklin)

Sparreboom, Prof. M. (Max)

Postdoc:

Ziermann, Dr. J. M. (Janine) at the IBL, University of Leiden (co-supervisor Prof. M.K. Richardson)

PhD-students:

Themudo, G., (Goncalo), PhD-student in combination with University of Porto, Portugal (co-supervisor Prof. N. M. Ferrand, CIBIO, Vairao)

Wielstra, B. (Ben), PhD-student in combination with the ITC, Enschede (co-supervisor Dr. B. Toxopeus and Prof. A. Skidmore)

Students and Fellows:

Bancila, R. (Raluca), SyntheSys visitor from November 2-22, and Martin Fellow-elect Curado, N. (Nuno), MSc-student at the CML, University of Leiden (co-supervisor Dr. K. Musters)

Lammers, Y. (Youri), student at 'Hogeschool Leiden' (co-supervisor drs. H. Van Bostelen)

Lourenco, M (Marta), Leonardo da Vinci-student at the IBL, University of Leiden (co-supervisor Dr. K. Vrieling)

Poyarkov, N. (Nick), Martin Fellow

Wallis, Dr. G.P. (Graham), Temminck Fellow

Bachelor students with J. Ziermann: J. T. Beukema and M. D. Guliker

Activities

Presentations:

'Dispersal at the range edge. II. *Triturus* salamanders in Portugal', colloquium at Naturalis on January 8.

'Dispersal at the range edge: *Triturus* salamanders in western Europe', seminar at the ITC, Enschede on January 11, at the University of Constanca, Roumania on April 25.

'Nuclear genes, phylogeny, lineage sorting and introgression in *Triturus* salamanders'. Naturalis-ZMA Dag, Zoologisch Museum Amsterdam, March 27.

'Molecular genetic testing of landscape ecological hypotheses: a case study on dispersal in the crested newt'. VIth World Congress of Herpetology, Manaus, Brazil on August 20; Landscape Genetics ESF funded workshop within the ConGen programme on October 21, Grenoble, France and for IBED visitors at Naturalis on December 5.

'Body plan evolution in salamanders: taxonomy meets evo-devo'. NCB-onderzoekersdag on November 2 at Naturalis, Leiden.

Bancila, R. 'Fluctuating asymmetry in *Podarcis* lizards' presentation on the occasion of SyntheSys visit at Naturalis on November 20.

Curado, N. 'Effects of landscape changes in a 30-year period on amphibian breeding ponds in Pas-de-Calais, NW' Colloquium at Naturalis on June 8.

Poyarkov, N. 'In search for Salamanders across Eurasia: an evolutionary outlook', seminar at the Museum of Vertebrate Zoology, Berkeley on July 15.

Poyarkov, N. 'Biodiversity of Eurasian amphibians and reptiles - perspectives for COI DNA barcoding' at the University of Guelph, on November 15.

Sparreboom, M. 'Salamanders of the Ryukyu Islands' lecture at Chengdu Institute of Biology, Chengdu, Sichuan, China, on July 10.

Wallis, G. P. 'The evolution of a species flock in New Zealand freshwater galaxiid fishes (Osmeriformes: Galaxiidae): the interplay of geology and life history' Colloquium at Naturalis on June 10 and seminar at the IBL, University Leiden on June 25.

Meetings and fieldwork:

First meeting of the EU ConGen Consortium: development of the CGToolBox and exploring the genomic approach to conservation genetics. Fondazione E. Mach – Centro di Ecologia Alpina, Viote del Monte Bondone, Trento, Italy; October 29.

Fieldwork - Tonnetjesdelle, de Veluwe, The Netherlands on March 21; central Portugal, from March 29 to April 16; Dobrogea, Roumania, from April 19 to 27 and Mayenne, France from April 30 to May 5.

Sparreboom, M. - Excursion to mountains of Taiwan to study *Hynobius* species during breeding season in February 2008 and field work on *Tylototriton taliangensis* and *Batrachuperus* species in Sichuan, China, with the supervision of a master student (Liuchang Liu) in July 2008.

Thesis examinations:

Curado, N. 'Effects of landscape changes in a 30-year period on amphibian breeding ponds in Pas-de-Calais, NW France' on May 22 at the CML, Leiden, The Netherlands.

Omolo, D. P. 'Integrating Landscape Ecology, Spatial Statistics and Population Genetics', on March 3 at the ITC, Enschede, The Netherlands.

Sluys, I. van der 'Divergent mating preferences and nuptial coloration in sibling species of cichlid fish' PhD.-thesis defence on June 26, at Leiden University.

Wielstra, B. 'Increasing the yield of biogeographical information contained in georeferenced genomes: integrating geospatial and phylogenetic approaches' on June 26 at the ITC, Enschede, The Netherlands.

Evaluation of four PhD.-candidates for the Flemish 'Instituut voor Innovatie door Wetenschap en Technologie' in Brussels on November 5.

Editorial, review and support services:

Associate Scientific Editor of the 'Herpetological Journal' (till June 30), member of the Editorial Board of the 'Zeitschrift fur Feldherpetologie' and 'Contributions to Zoology' (till June 30).

Editor-in-chief for 'Contributions to Zoology' per July 1.

Manuscripts were reviewed for colleagues and for the following journals (* more than one): Animal Biology; Annales Zoologici Fennici; Biological Journal Linnean Society; Biologia; Conservation Genetics (*); Herpetological Journal; Molecular Ecology (*); Zoology Studies and Zootaxa.

Scientific contributor to IUCN, Conservation International and NatureServe. 2008. An Analysis of Amphibians on the 2008 IUCN Red List <www.iucnredlist.org/amphibians>.

Member of the 'International Herpetological Committee'.

Baird, A. - Manuscript reviewed for Ecotoxicology.

Sparreboom, M. - Guest professor at Chengdu Institute of Biology, Chengdu, Sichuan, China. July 2008.

Grant applications:

Arntzen, J. W., F. Vonk & M. K. Richardson (2008) From phylogenetics to phylogenomics: the mud snake Tree of Life (Serpentes: Homalopsidae). Submitted with NCB *in statu nascendi*.

Arntzen, J.W., G. P. Wallis, A. B. Baird, M. K. Richardson and P. Taberlet (2008) Tracing natural selection and adaptation with landscape genomics. Submitted with NWO_ALW.

Posters:

Espregueira Themudo, G. & J. W. Arntzen (2008) Resolving a rapid radiation of newts: a boost from multiple nuclear markers. June 5-8 at the SMBE'08 meeting, Barcelona, Spain and August 17-22 at the VIth World Congress of Herpetology, Manaus, Brasil.

Baird, A. B. (2008) Comparison of phylogenies derived from multiple linkage groups: A test of chromosomal speciation in *Rhogeessa*. Molecular Insights into Natural Resource Conservation and Management symposium at Purdue University, October 15, West Lafayette, Indiana.

List of publications

SCI-listed journals:

- Arntzen, J. W. & G. Espregueira Themudo (2008) Environmental parameters that determine species geographical range limits as a matter of time and space. *Journal of Biogeography* 35: 1177-1186.
- Arntzen, JW, GP Wallis et al. (in press) Asymmetric viability of reciprocal-cross hybrids between crested and marbled newts (*Triturus cristatus* and *T. marmoratus*). *Evolution*.
- Babik, W., M. Pabijan, J.W. Arntzen, W. Durka and J. Radwan (in press) Major histocompatibility complex (MHC II) variation in the great crested newt (*Triturus cristatus*) shows the southern richness – northern purity pattern. *Molecular Ecology*.
- Baird, A. B., D.M. Hillis, J.C. Patton, and J.W. Bickham. 2008. Evolutionary history of the genus *Rhogeessa* (Chiroptera: Vespertilionidae) as revealed by mitochondrial DNA sequences. *Journal of Mammalogy* 89: 744-754.
- Baird, A. B., D.M. Hillis, J.C. Patton, and J.W. Bickham (in press) Speciation by Monobrachial centric fusions: A test of the model using nuclear DNA sequences from the bat genus *Rhogeessa* *Molecular Phylogenetics and Evolution*.
- Baird, A. B., G.B. Pauly, D.W. Hall and T.J. LaDuc (in press) Records of the porcupine (*Erethizon dorsatum*) from the eastern margins of the Edwards Plateau in Texas. *Texas Journal of Science*.
- Balkenhol, N., J. W. Arntzen *et al.* (in press) Identifying future research needs in landscape genetics: where to from here? *Landscape Ecology*.
- Espregueira Themudo, G., W. Babik and J. W. Arntzen (in press) A combination of techniques proves useful in the development of nuclear markers in the newt genus *Triturus*. *Molecular Ecology Resources*.
- Espregueira Themudo, G., B. Wielstra and J. W. Arntzen (submitted) Multiple nuclear and mitochondrial genes resolve the branching order of a rapid radiation of crested newts (*Triturus*, Salamandridae). *Molecular Phylogenetics and Evolution*.
- Grueber, C.E., G.P. Wallis & I.G. Jamieson (2008) Heterozygosity-fitness correlations and their relevance to studies on inbreeding depression in threatened species. *Molecular Ecology* 17: 3978-3984.

Non SCI-listed journals:

- Lanza, B., E. Gentile & J. W. Arntzen (in press) Vertebral numbers in the Caudata of the western Palaearctic (Amphibia). Atti del Museo Civico di Trieste.
- Ross, F. D., E.-E. Kischlat and M. Van Tomme (submitted) Martyr's mistake led Laurenti astray. IUCN-SSC Crocodile Specialist Group Newsletter.

Book chapter:

- Arntzen, J. W., M. Sparreboom *et al.* (2008) Amphibians of the Palaearctic realm. Chapter 10 (Pp. 106-113) in: Stuart, S. N., M. Hoffmann, J. S. Chanson, N. A. Cox, R. J. Berridge, P. Ramani and B.E. Young (eds) Threatened Amphibians of the World. Lynx Edicion, Barcelona, Spain; IUCN, Gland, Switzerland and Conservation International, Arlington, Virginia, USA.
- Arntzen, J. W., M. Sparreboom *et al.* (2008) several species accounts in 'Threatened Amphibians of the World' in: Stuart, S. N., M. Hoffmann, J. S. Chanson, N. A. Cox, R. J. Berridge, P. Ramani and B.E. Young (eds). Lynx Edicion, Barcelona, Spain; IUCN, Gland, Switzerland and Conservation International, Arlington, Virginia, USA.
- Arntzen, J.W. & G. Smit (in press) *Triturus cristatus* (Laurenti 1768) - noordelijke kamsalamander. RAVON atlas amfibieen en reptielen van Nederland.
- Baird, A. B. (submitted) Genetic identification of cryptic species: An example in *Rhogeessa*. In: DeWoody, Bickham, Michler, Nichols, Rhodes, and Woeste (eds). Molecular insights into Natural Resource Management and Conservation.
- Espregueira Themudo, G. & J. W. Arntzen (in press) Distribution of *Triturus marmoratus* and *T. pygmaeus*. In 'Atlas of the amphibians and reptiles of Portugal' (ed. A. Loureiro *et al.*).
- Laurin, M., J. W. Arntzen, A. M. Bauer, S. E. Evans, A. Kupfer, D. Marjanović, H. Müller, L. Olsson, J.-C. Rage & D. San Mauro (submitted). Amphibia C. Linnaeus 1758, converted clade name.
- Laurin, M., J. W. Arntzen, A. M. Bauer, S. E. Evans, A. Kupfer, D. Marjanović, H. Müller, L. Olsson, J.-C. Rage & D. San Mauro (submitted). Lissamphibia E. Haeckel 1866, converted clade name.
- Sparreboom, M. (2008) Website 'Salamanders of the Old World' <<http://science.naturalis.nl/research/people/cv/sparreboom/salamanders-of-the-old-world.aspx>>.

Reports:

- Curado, N. Effects of landscape changes in a 30-year period on amphibian breeding ponds in Pas-de-Calais, NW France, together with the Centre of Environmental Sciences, IBL, University Leiden. 32 pp.
- Wielstra, B. Increasing the yield of biogeographical information contained in georeferenced genomes: integrating geospatial and phylogenetic approaches. Research proposal, together with the International Institute for Geo-information Science and Earth Observation (ITC), Enschede, The Netherlands. 37pp.

By third parties at least in part based upon Naturalis-material, including older publications not listed previously:

- Fritz, U., D. Guicking, M. Auer, R.S. Sommer, M. Wink & A.K. Hundsdoerfer (2008) Diversity of the southeast Asian leaf turtle genus *Cyclemys*: how many leaves on its tree of life ? *Zoologica Scripta* 37: 367-390.
- Hermann, P. and M. Stadler (2008) Der gesprenkelte Schlangenskink (*Ophiomorus punctatissimus* Bibron & Bory, 1833) auf der Peloponnes, Griechenland. Diplomarbeit, Hochschule Anhalt, Anhalt, Deutschland.
- Klaver C. (2007). Inseparable friends in life and death. The life and work of Heinrich Kuhl (1797-1821) and Johan Conrad van Hasselt (1797-1823), students of prof. Theodorus van Swinderen. Barkhuis, Groningen.
- Klaver, C. (2008) *Furcifer polleni* Peters, 1873 (Reptilia, Chamaeleonidae): its nomenclature and types. *Zoosyst. Evol.* 84: 45-48.
- Macculloch, R.D., A. Lathrop, L.R. Minter and S.Z. Khan (2008) *Otophryne* (Anura: Microhylidae) from the highlands of Guyana: redescription, vocalizations, tadpoles and new distributions. *Papeis Avulsos de Zoologia* 48: 247-261.
- Macculloch, R.D., A. Lathrop, P.J.R. Kok, L.R. Minter, S.Z. Khan and C.L. Barrio-Amoros (2008) A new species of *Adelophryne* (Anura: Eleutherodactylidae) from Guyana, with additional data on *A. gutturosa*. *Zootaxa* 1884: 36-50.
- Murphy, J. C. (2007) Homalopsid snakes: Evolution in the mud. Krieger, Malabar, Florida.
- Rooijen, J. van and G. Vogel (2008) Contributions to a review of the *Dendrelaphis pictus* complex (Serpentes: Colubridae) – 1. Description of a sympatric species. *Amphibia Reptilia* 29: 101-115.
- Rooijen, J. van and G. Vogel (2008) A new species of *Dendrelaphis* (Serpentes: Colubridae) from Java, Indonesia. *The Raffles Bulletin of Zoology* 56: 189-197.
- Rooijen, J. van and G. Vogel (2008) An investigation into the taxonomy of *Dendrelaphis tristis* (Daudin, 1803): revalidation of *Dipsas schokari* (Kuhl, 1820) (Serpentes, Colubridae). *Contributions to Zoology* 77: 33-43.
- Schleip, Wulf D. 2008. Revision of the Genus *Leiopython* Hubrecht 1879 (Serpentes: Pythonidae) with the Redescription of Taxa Recently Described by Hoser (2000) and the Description of New Species. *Journal of Herpetology* 42: 645–667.
- Vogel, G. & J. van Rooijen (2008) Contributions to a review of the *Dendrelaphis pictus* (Gmelin, 1789) complex – 2. The eastern forms (Serpentes: Colubridae). *Herpetozoa* 21: 3-29.
- Vonk, F.J. et al. (2008) Evolutionary origin and development of snake fangs. *Nature* 454: 630-633.

Citations

J. W. Arntzen: 1622 (increase of 310 relative to the same time last year)
Web-of-Science Hirsch-Index: 22

Compiled by J. W. Arntzen, Leiden, December 16, 2008