

1887), was consumed by the snake *Dipsas indica* Laurenti, 1768, and one exotic invader snail Bradybaenidae - *Bradybaena similaris* (Férussac, 1821), were consumed by the serpent *Dipsas albifrons* (Sauvage, 1884) - these were positively confirmed through this study.

For references to studies completed or in progress, and for taxonomic details of involved species, please contact the author of this report.

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*FROM LEIDEN WITH LOVE:
MALACOLOGICAL THESES FROM LEIDEN
UNIVERSITY 1969-2008*

The National Museum of Natural History (Naturalis) in Leiden, The Netherlands, has a strong track record in malacological research (Bruggen, 1977). In conjunction with Leiden University, many students have contributed to malacology by writing and defending their doctoral theses on that subject. The most recent thesis from Leiden has been my own: "Resolving Riddles and Presenting New Puzzles in Chondrinidae Phylogenetics". On december 3rd 2008, I (successfully) defended my thesis before a committee which included several distinguished malacologists: prof. dr. E. Gittenberger (promotor), prof. dr. M. Schilthuizen, prof. dr. R.A. Bank, dr. A.J. de Winter and dr. J.J. Vermeulen. Building on the work by prof. dr. Edmund Gittenberger, I tested several hypotheses derived from his thesis "Beiträge zur Kenntnis der Pupillacea III, Chondrininae" [Contributions to the knowledge of the Pupillacea III, Chondrininae] (1973) using molecular tools.

The main focus of my project has been on *Chondrina* and *Abida*. Both genera show their greatest (species)

diversity in the Iberian peninsula. Both are calciphilous taxa, with *Chondrina* occurring solely on near vertical, exposed rockfaces. Using DNA-barcoding data, we demonstrated that the current distribution of the genus *Chondrina* has been established by at least four waves of dispersal across the palaeartic. A group of taxa that represents one of the earliest waves is currently known as *Chondrina farinesii* s.l. The extreme variation in shell size and shape in this complex has resulted in many taxonomic rearrangements in the past, which culminated in a 'lump' into a single species, i.e. *Chondrina farinesii* (Draparnaud, 1801)(Gittenberger, 1973). Strikingly, the barcoding results showed that we deal with a radiation of (at the very least) 14 species. Many names have therefore been dug out of the graveyard of taxonomy. A 'Riddle (partly) resolved'.

One particular species of *Abida* has attracted most time and research effort. *Abida secale*, which is found from Great-Britain in the northwest to Slovakia in the east. The southernmost edge of its distribution is located in the Spanish province of Valencia. The species is morphologically very constant across its range. However, an amazing exception to this morphological stability is observed in the Spanish province of Catalunya, where currently 14 extant subspecies are recognized! The cause for the extreme morphological variation in *Abida secale* in a relatively small part of its range is not yet clear. Molecular data suggest a hybridization and introgression event of *Abida attenuata* mitochondrial DNA into *A. secale*, which obscures the phylogenetic relationships between the subspecies. Enter a 'New puzzle'.

The results of this project are to be published in the near future (keep an eye on the website!). However, for those who cannot wait, feel free to contact me for a copy of the thesis!

The next generation of PhD students is already there; Liew Thor-Seng and Bastian Reijnen are working on their

respective PhD projects at Naturalis. Liew is working on land snails and slugs from Borneo, while Bastian explores the marine family Ovulidae in the Indo-pacific. Malacology in Leiden is still going strong!

An overview of malacological theses from Leiden 1969-2008:

2008 - Kokshoorn, B. Resolving Riddles and Presenting New Puzzles in Chondrinidae Phylogenetics.

2006 - Gittenberger, A. The evolutionary history of parasitic gastropods and their coral hosts in the Indo-Pacific.

2004 - Uit de Weerd, D.R. Molecular phylogenetic history of eastern mediterranean alopiinae, a group of morphologically indeterminate land snails.

2001 - Moorsel, C.H.M. van. Molecular phylogenetics of a speciose group: *Albinaria* and the search for homology.

1994 - Schilthuizen, M. Differentiation and hybridization in a polytypic snail.

1992 - Kemperman, T.C.M. Systematics and evolutionary history of the *Albinaria* species from the Ionian islands of Kephallinia and Ithaka (Gastropoda, Pulmonata: Clausiliidae).

1979 - Breure, A.S.H. Systematics, phylogeny and zoogeography of Bulimulinae (Mollusca).

1975 - Backhuys, W. Land and fresh water Molluscs of the Azores.

1973 - Gittenberger, E. Beiträge zur Kenntnis der Pupillacea III, Chondrininae.

1969 - Bruggen, A.C. van. Studies on the Land Molluscs of Zululand. With notes on the distribution of land molluscs in southern Africa.

References

Bruggen, A.C. van (ed.), 1977. Nederlandse Malacologische Vereniging, 1-53, Leiden.

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Publications

MARINE MOLLUSKS OF BERMUDA: CHECKLIST & BIBLIOGRAPHY

Russell H. Jensen, Timothy A. Pearce

pub. 2009. 473 pages, 16 full page colour plates, paperback. \$29.95 (USD)
Delaware Museum of Natural History.

“a complete list of modern species names that shows their taxonomic placement and points out synonyms, misidentifications, and literature references to the species and illustrations. The book documents more than 900 mollusk species, including over 100 never before reported and 66 found only in Bermuda.”

WORLD OCEAN CENSUS: A GLOBAL SURVEY OF MARINE LIFE

Darlene Trew Crist, Gail Scowcroft, James M. Harding, Jr.

pub. 2009. 256 pages, colour photographs throughout, hardcover with jacket. \$40.00 (CAD)
Firefly Books, Richmond Hill, Ontario.
ISBN-10 1554074347

A popular science book reviewing the drama and some highlights of the global Census of Marine Life, which is drawing to a close in 2010.

SNAIL

Peter Williams

pub. 2009. 168 pages, 86 illustrations (59 colour), paperback. £9.99 (GBP)
Reaktion Books, London.
ISBN 1861895283

“a philosophical look at life from the point of view of a snail”

