

# Phylogenetic ecology of octocoral - gastropod associations Reijnen, B.T.

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In my opinion there is less fun in doing molecular work, or research in general, if you have not been able to collect the specimens yourself. Therefore I thank most cordially Nicolette Snijders, Frank Stokvis and Davy van Dooren (a.k.a mini-zeeteam) for their companionship and for being my first scientific dive buddies during our time at Curaçao in 2005. Later on, most of the fieldwork was conducted with the 'Naturalis Zeeteam'. I am especially indebted to the core members of the Zeeteam for the good times in the field, coffee breaks in the morning and all their advice and wisdom.

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### Curriculum vitae

Bastian Theodoor Reijnen was born in The Hague, The Netherlands on June 24<sup>th</sup>, 1982. He enjoyed his childhood in Zoetermeer where he started higher general secondary education (HAVO) in 1994 at the Erasmus College and graduated in 1999 majoring in natural sciences. In the summer holidays of 1994, Bastian got his first introduction to SCUBA diving in a swimming pool at a French campsite. Within a single year he was licensed as an "Open Water Diver" and in the summer of 1995 he got his "Advanced Open Water Diver" license.

After passing high school he continued his education in Leiden at the University of Applied Sciences to study organic chemistry, where he successfully graduated in 2003. For his internship at the Synthetic and Bio-organic Chemistry lab (VU University Amsterdam), he investigated a synthetic route to prepare a precursor for a compound, which could become a new anti-biotic. In this way he got introduced to the academic research world and he acquired a taste for doing research, but not in the field of organic chemistry. Therefore he joined a three-month program at Leiden University to become eligible for an MSc study in Biology. In 2004 he started his MSc track Biology, Evolutionary and Ecological Sciences. At a trip to Artis Royal Zoo in this MSc track, biodiversity lecturer Dr. Rinny Kooi noticed his interest in marine life and systematic zoology. She advised him to contact Prof. dr. Edmund Gittenberger for an internship at the National History Museum, Naturalis (nowadays Naturalis Biodiversity Center at Leiden). In 2004, Bastian started his first internship under supervision of PhD candidate Arjan Gittenberger on the molecular systematics of Fungiidae corals. By hearing all the good stories about fieldwork, he wanted to join a scientific diving expedition himself. Fortunately, for his second and final MSc internship at Naturalis, Dr. Bert Hoeksema offered him the opportunity to organise fieldwork in Curação in 2005 with three fellow students. This was his first introduction to Octocorallia and Ovulidae, since the project concerned: "The Ovulidae from Curação, The Netherlands Antilles: a phylogenetic and ecological approach". After almost three months in the field, and many hours in the molecular laboratory at the Van der Klauw-building, he finished his MSc at Leiden University early 2007. To financially support his study and life in Leiden he worked during the weekends and holidays as front of house at the exhibition part of the NBC. In 2007 he continued his research career at Naturalis, besides being front of house in the weekends, as a research assistant for various (molecular) projects. In 2008 he ventured out for a little while and worked as a project assistant at the Royal Netherlands Institute for Sea Research (NIOZ), to help in finishing molecular work for a European research project (Mar-Pace) for Dr. Katja Philippart. Meanwhile he worked at Naturalis on various projects dealing with collections and research until 2011. From 2007 to 2011 he also continued his research on Octocorallia and Ovulidae in his spare time. In 2011 he applied for a PhD research project at Naturalis, sponsored by the FES programme, on the relationship between Octocorallia and Ovulidae and started with this PhD project on January 1st, 2012. Approximately eleven years after getting introduced to Naturalis, after 400 research dives, visits to many tropical countries such as Indonesia, Malaysia and the Maldives, countless hours spent in the molecular laboratory and behind the microscope, this PhD thesis has come to completion in 2016.

### **Publications**

- Publications resulting from thesis
- Reijnen BT, van der Meij SET, submitted. Coat of many colours DNA reveals polymorphism of mantle patterns and colouration in Caribbean Cyphoma Röding, 1798.
- Reijnen BT, submitted. A new perspective on Ovulidae phylogenetics and systematics with special reference to the subfamily Aclyvolvinae.
- Reijnen BT, van der Meij SET, submitted. Bioactivity of Caribbean corals related to their associated fauna.
- Reijnen BT, 2015. Molecular data for *Crenavolva* species (Gastropoda, Ovulidae) reveals the synonymy of *C. chiapponii*. ZooKeys 501: 15–26.
- Reijnen BT, McFadden CS, Hermanlimianto YT, van Ofwegen LP, 2014. A molecular and morphological exploration of the generic boundaries in the family Melithaeidae (Coelenterata: Octocorallia) and its taxonomic consequences. Molecular Phylogenetics and Evolution 70: 383–401.
- Reijnen BT, Hoeksema BW, Gittenberger E, 2010. Host specificity and phylogenetic relationships among Atlantic Ovulidae (Mollusca: Gastropoda). Contributions to Zoology 79: 69–78.

#### Publications outside the scope of this thesis

- Gittenberger E, Kokshoorn B, Bößneck U, Reijnen BT, Groenenberg DSJ, 2016. *Granopupa* in Iran, monophyly, and the fossil Granariinae (Gastropoda, Pulmonata, Chondrinidae). Zookeys 592: 27-37.
- Meij SET van der, Reijnen BT, 2014. The curious case of *Neotroglocarcinus dawydoffi* (Decapoda, Cryptochiridae): unforeseen biogeographic patterns resulting from isolation. Systematics and Biodiversity 12: 503–512.
- Smit J, Reijnen BT, Stokvis FR, 2013. Half of the European fruit fly species barcoded (Diptera, Tephritidae); a feasibility test for molecular identification. ZooKeys 365 (special issue): 279–305.
- Wielstra B, Crnobrnja-Isailović J, Litvinchuk SN, Reijnen BT, Skidmore AK, Sotiropoulos K, Toxopeus AG, Tzankov N, Vukov T, Arntzen JW, 2013. Tracing glacial refugia of *Triturus* newts based on mitochondrial DNA phylogeography and species distribution modelling. Frontiers in Zoology 10: 1–14.
- Fransen CHJM, Reijnen BT, 2013. Caught in speciation? A new host for *Conchodytes melea-grinae* Peters, 1852 (Decapoda, Caridea, Palaemonidae) Zootaxa 3721: 265–280.
- Philippart CJM, Amaral A, Asmus R, van Bleijswijk J, Bremner J, Buchholz F, Cabanellas-Reboredo M, Catarino D, Cattrijsse A, Charles F, Comtet T, Cunha A, Deudero S, Duchene J, Fraschetti S, Gentil F, Gittenberger A, Guizien K, Goncalves JM, Guarnieri G, Hendriks I, Hussel B, Pinheiro Vieira R, Reijnen BT, Sampaio I, Serrao E, Sousa Pinto I, Thiebaut E, Viard F, Zuur AF, 2012. Spatial synchronies in the seasonal occurence of larvae of oysters (*Crassostrea gigas*) and mussels (*Mytilus edulis/galloprovincialis*) in European coastal waters. Estuarine, Coastal and Shelf Science 108: 52–63.
- Fransen CHJM, Reijnen BT, 2012. A second discovery of *Lacertopontonia chadi* Marin, 2011 (Crustacea: Decapoda: Palaemonidae) with remarks on its systematic position. Zootaxa 3437: 43–50.
- Benzoni F, Arrigoni R, Stefani F, Reijnen BT, Montano S, Hoeksema BW, 2012. Phylogenetic position and taxonomy of *Cycloseris explanulata* and *C. wellsi* (Scleractinia: Fungiidae): lost mushroom corals find their way home. Contributions to Zoology 81: 125–146.

- van der Meij SET, Reijnen BT, 2011. First observations of attempted nudibranch predation by sea anemones. Marine Biodiversity 42: 281–283.
- Reijnen BT, van der Meij SET, van Ofwegen LP, 2011. Fish, fans and hydroids: host species of pygmy seahorses. Zookeys 103: 1–26.
- Gittenberger A, Reijnen BT, Hoeksema BW, 2011. A molecularly based phylogeny reconstruction of mushroom corals (Scleractinia: Fungiidae) with taxonomic consequences and evolutionary implications for life history traits. Contributions to Zoology 80: 107–132.
- Hoeksema BW, van der Land J, van der Meij SET, van Ofwegen LP, Reijnen BT, van Soest RWM, de Voogd NJ, 2011. Unforeseen importance of historical collections as baselines to determine biotic change of coral reefs. Marine Ecology 32: 135–141.

#### Publications outside the scope of thesis (non-peer review)

- Reijnen BT, 2010. Camouflage hampering the taxonomy of Ovulidae (Mollusca: Gastropoda) in the centre of marine biodiversity (Halmahera, Indonesia). Australian Shell News 137: 5–7.
- Reijnen BT, 2011 Ovulidae (Gastropoda: Cypraeoidea), opmerkelijk en opvallend. Spirula 381: 80–82. [in Dutch].