

FOUR UNKNOWN EPIZOIC DIATOM SPECIES FOUND ON LOGGERHEAD SEA TURTLES IN THE ADRIATIC SEA

Bart Van de Vijver^{1,2}, Käthe Robert^{1,2}, J. Patrick Kociolek³, Changping Chen^{4,5}, & Suncica Bosak⁶

¹Meise Botanic Garden, Research Department, Nieuwelaan 38, B-1860 Meise, Belgium

(bart.vandevijver@plantentuinmeise.be)

²University of Antwerp, Department of Biology - ECOBE, Universiteitsplein 1, B-2610 Wilrijk, Belgium

³Museum of Natural History and Department of Ecology and Evolutionary Biology, University of Colorado, Boulder, CO 80309, USA

⁴School of Life Sciences, Xiamen University, Xiamen 361102, China

⁵Key Laboratory of Ministry of Education for Coastal and Wetland Ecosystems, Xiamen University, Xiamen 361102, China

⁶University of Zagreb, Faculty of Science, Department of Biology, Rooseveltov trg 6, 10000 Zagreb, Croatia

In recent years, there is a growing scientific interest in epibiotic communities. Sea turtles host unique and diverse diatom communities composed of a large number of genera, several of which recently described as new to science such as *Chelonicola*, *Medlinella* and *Poulinea*, all known almost exclusively from the carapaces and skin of marine turtle species and other marine vertebrates (Majewska et al. 2015, Frankovich et al. 2016).

During a survey of the epizoic diatom flora on carapaces of loggerhead sea turtles (*Caretta caretta*) from the Adriatic Sea, four unknown diatom taxa were discovered on the carapace of one turtle. For at least two of them, further analysis revealed that they most likely represent two new genera whereas the third and fourth taxon could be assigned to the genera *Catenula* and *Planothidium* respectively. These observations show the special nature of the epizoic diatom flora on loggerhead turtles and confirm our lack of taxonomic knowledge increasing the importance of the currently ongoing project.

A first unknown taxon belongs to the monoraphid diatoms. The rapheless valve is characterized by the presence of a large silica crest surrounding the entire valve and covering part of the valve margin. The striae consist of two large areolae, separated by a broad hyaline plate and covered externally by porous hymenes. The raphe is rather simple with bent terminal fissures and simple, straight central endings. Comparison with acnathoid genera such as *Scalariella*, *Kolbesia* and *Madinithidium* yielded both clear similarities but also distinct differences (Desrosiers et al. 2014, Riaux-Gobin et al. 2012). The second unknown taxon shows similarities to the genera *Nitzschia*, *Rhopalodia* and *Psammodictyon* based on the presence of an eccentric raphe, distinct fibulae forming a fibular plate and a dorsiventral valve outline. The third taxon is most likely a new *Catenula* species, a small amphoroid genus with only marginal striae, a very simple raphe structure and non-perforated, narrow girdle bands. Finally, the fourth taxon clearly belongs to the genus *Planothidium* showing uniseriate striae on the rapheless valve and distinct, shallow depressions in the axial area.

Desrosiers, C. et al. (2014) *Phycologia* 53(6): 583–592, Frankovich, T. et al. (2016) *Phytotaxa* 272(2): 101–114, Majewska, R. et al. (2015) *Phytotaxa* 233(3): 236–250, Riaux-Gobin, C. et al. (2012) *Fottea* 12(1): 13–25.