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Hunting for the Paratethyan acorn barnacles (Cirripedia: Balanomorpha: Balanidae)

The acorn barnacles, inhabitants of the rocky seashores, comprise numerous extant genera, but are also known from the fossil record. They also represent one of the most common invertebrate encrusters on oyster shells. Their sessile modes of life lead to the specific anatomy of soft tissues and the development of a complex calcareous skeleton. Due to their habitat in high energy environment, complete fossils are not very common, but disarticulated plates can be found in soft sedimentary rocks and extracted from e.g. marls by the standard wet-sieving technique. Their complex microstructures can be also recognized from cross sections of consolidated rocks. Nevertheless, they are not particularly handy for biostratigraphical research and are therefore rarely studied in detail or even mentioned in the published papers.

The aim of this study is to present the findings from the Central/ Northern Croatia and give a clue to recognition of barnacles from thin sections.

Extracted barnacles (Figure a) and rocks comprising barnacle particles were collected in the field, at the Medvednica Mt. and Marijagorička Brda Hills near Zagreb (Croatia), from deposits of the Middle Miocene (Badenian) age. Cross sections were also recognized in the pebbles from the Quaternary gravels SE of Zagreb. Additionally, fossils from the Croatian Natural History Museum in Zagreb were also taken into consideration.

Thin sections were prepared from bioclastic limestones of the Badenian age and from the pebbles collected in the Sava River alluvial plane (Figure b). Diagnostic features were compared with the study of recent barnacle skeletons.

Acorn barnacles are the important proxies of the rocky shores and therefore deserve much more attention in the study of marginal marine deposits in the fossil record. We hope that this study will contribute to the better knowledge of this neglected fossil group.

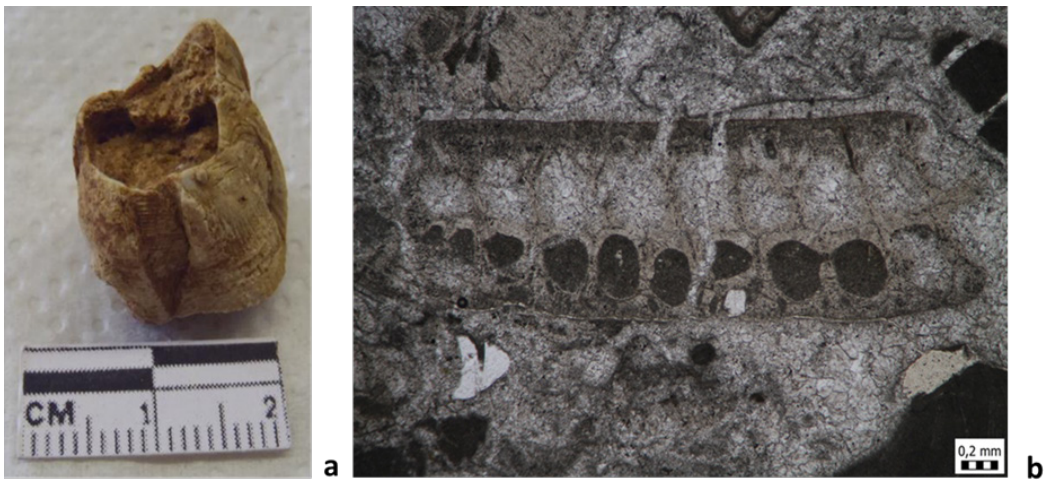

Figure:
(a) Miocene fossil barnacle Balanus vadaszi Kolosvary, 1949 found at the Marijagorička Brda Hills (NW from Zagreb) (Vadlja, 2018) and (b) photomicrograph presenting a cross section of a barnacle from the Miocene pebble in the Gravel pit Abesinija (SE from Zagreb).

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