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IMC20 THE 20TH INTERNATIONAL MICROSCOPY CONGRESS

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"SCIENTIFIC INNOVATION AND CONVERGENCE THROUGH MICROSCOPY PLATFORM"

ABSTRACT BOOK

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Opt-Out of Publishing

Microsculpture of Cyzicus tetracerus (Krynicki, 1830) (Crustacea: Spinicaudata) from Azraq Playa (Jordan) under scanning electron microscope

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Clamp shrimps belonging to the order Spinicaudata are an important model object for evolutionary and ecological studies, including paleoreconstructions. Their shells are known since the Devonian period from all continents, with extant forms inhabit all continents except Antarctica as well as many oceanic islands. Unfortunately, we still know very little about recent species in order to reliably identify fossil taxa. The aim of this study is to investigate shells microsculpture of the recent species *Cyzicus tetracerus* (Krynicki, 1830) (Spinicaudata: Cyzicidae), nowadays widely distributed in the southern regions of the North hemisphere. Shells of *C. tetracerus* were selected from a dried reservoir in Azraq Playa locality, the eastern desert of Jordan. All specimens were collected by C. Bandel during field work in 1998 and handed over to V.V. Zharinova by J.V. Schneider. The collection included about 150 shells. Among them, about 70 best-preserved shells were selected for microsculpture analysis via TESCAN VEGA II scanning electron microscope (TESCAN, Czech Republic). Shells were investigated from the outer and inner sides. The microsculpture description is given according to new improved methodology (Zharinova, Silantiev, 2022), based on the proposed types of microsculpture (Scholze, Schneider, 2015). Valves of *C. tetracerus* (Krynicki, 1830) from the investigated material reach 6 mm in length. The number of growth lines is from 12 to 14. Thus, all individuals were of the same age. No juveniles forms were found. According to SEM data, *C. tetracerus* has a complex microsculpture represented by three types. On the larval valves and umbo, microsculpture is represented by winding ribs of various lengths. They form a simple radial fringes type of microsculpture. In the central part of the valve, winding ribs are presented in the upper part of the growth bands. They form small cells (pits) at the bottom of the growth bands. This microsculpture is transitional – radial fringes and pitted. On the ventral margin, the ribs are closely spaced. They form small pits (simple pitted microsculpture). Types of microsculpture do not differ on the outer and inner sides of the valve. According to some researchers, changes in environmental conditions are reflected in the microsculpture of Spinicaudata (Novozhilov, 1954; Grube, 1865; Webb, 1979). Thus, the observed change in the types of microsculpture within the same valve of *C. tetracerus* could have occurred due to changes of environmental variables. In addition, such difference in microsculpture helps to trace the stages of ontogeny. On the larval valves, a type of microsculpture is traced, which is characteristic of juvenile specimens. The microsculpture changes near valve margins. This is associated with the growth of the valve and changes in the microsculpture in adults. At the same time, the transition from one type of microsculpture to another on different parts of the valve may be one of the taxonomic features of *C. tetracerus*. The features of microsculpture revealed by us in the recent *C. tetracerus* should be taken into account by other researchers when interpreting paleontological data. This work was supported by the grants the Russian Science Foundation, RSF 22-14-00258.