ABSTRACTS

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CAPES

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MYTILIDAE SHELLS AS AN AVAILABLE SURFACE FOR SCLEROBIONTS COLONIZATION: IMPLICATIONS TO ECOLOGY AND PALEONTOLOGY

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Mollusk shells may act as colonization surfaces for sclerobionts depending on the environmental exposure and their attributes. However, the main factors that can affect the establishment of an organism on hard substrates on modern and time-averaged shells remain uncertain. Using field approaches, we compared sclerobionts (bioerosion and biofouling) colonization patterns on Mytilidae empty shells collected from the Uruguayan coast (La Paloma-Rocha). Mytilids are/were critical components of Recent and Holocene hard bottom communities of temperate zones of the World ocean. These had the highest abundance of shells (*e.g.*, *Mytilus* sp. and *Brachidontes rodriguezii*) washed ashore, representing 89% of 629 shells gathered. We evaluated the influence of shell size, fragmentation, valve position (internal-external), and valve site (apex-center-base), ornamentation, and color. Most shells were disarticulated (98%), being found more left valves (38%) than right valves (36%). The average shell area recorded was 394mm² and most shells showed reduced color (35%). From Mytilidae shells, 31% and 37% showed bioerosion and biofouling, respectively. Canonical correspondence analysis, a multivariate statistical procedure that allows verifying the linear correlations between sets of variables, was used to assess what factors are associated with the occurrence of sclerobionts on Mytilidae shells. The sclerobionts community associated to bioerosion were composed mainly by Polychaeta, Bryozoa, Hydrozoa and Porifera. The most important factors that influenced the bioerosion coverage percentage was shell length, surface complexity and color (axes 1 and 2 explained 84% of the data ordination). Sclerobiont community associated to biofouling was composed mainly by Cirripedia, Bryozoan, Bivalvia and algae. The most important factors that influenced the biofouling coverage percentage was also shell length, surface complexity and color (axes 1 and 2 explained 73% of the data ordination). In this way, Mytilidae shells with higher length (>18mm), presence of internal and external ornamentation, and with natural color are more suitable to sclerobionts. The results indicate that both bioerosion and biofouling are more representative on recent shells, highlighting the relevance of current ecological relationships for paleontology of mytilids. Funding information: CNPq 422766/2018-6