

CONTRASTING ENCRUSTATION PATTERNS ON TRIGONIOID AND PECTINID BIVALVES FROM THE EARLY CRETACEOUS OF THE NEUQUÉN BASIN, ARGENTINA

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Encrusting faunas provide exceptional opportunities for palaeoecological studies, since they preserve several key features, like absolute abundance and spatial relationships among individuals. The encrusting fauna of semiinfaunal trigonioids of the genus *Steinmanella* (lower Valanginian of the Mulichinco Formation and upper Valanginian-lower Hauterivian of the Agrio Formation) were compared to the large epifaunal pectinid *Prohinnites* (upper Valanginian, Agrio Formation). Both inhabited shallow normal marine settings. All of their encrusters were mapped, recording their type, size and position. The percentage of shells colonized by at least one encruster was calculated for both basibionts, along with their species richness and Pielow's Diversity Index. Mean of encrusters per valve were calculated and compared with an analysis of deviance. Each basibiont's valves were divided in zones to assess the distribution of encrusters by a generalized linear mixed model (GLMM). Percentage of valves encrusted was significantly ($p < 0.0001$) higher for the pectinid (92.68%) than for the trigonioid (43.46%). Likewise, mean of encrusters per valve was higher in *Prohinnites* (19.34) than in *Steinmanella* (2.17; $p < 0.0001$). Richness was greater in the pectinid (14 encrusting taxa) than in the trigonioid (10). Both encrusting communities were dominated by oysters (*Steinmanella*: 86% of encrusters; *Prohinnites*: 57.49%). Solitary organisms prevail over colonial ones in both bivalves, but colonial organisms are more diverse and abundant in the pectinid. Pielow's indexes are 0.33 (*Steinmanella*) and 0.56 (*Prohinnites*). GLMM results showed that encrusters preferred the corselet and escutcheon of trigonioid, and avoided the proximal third of the pectinid's valves. These results indicate that *Prohinnites* sustained a more diverse and abundant encrusting fauna than *Steinmanella*. This is likely due to the pectinid's epifaunal habit and its heavy, stable ample valves. Both communities correspond to the upper euphotic zone sclerobiofacies; however, in neither of them interactions are common among encrusters, and both are dominated by oysters. The gregarious behavior of oysters, coupled to a greater larvae input (they conformed bioherms in the Agrio Formation) were likely key for rapid colonization and coverage of available substrates, which gave them a head-start advantage over other encrusters. They were, however, unable to exclude other encrusters, which could settle on shells regardless of the oyster's presence. This pattern is consistently seen in other mollusks from the Agrio Formation, resulting in encrusting communities structured mostly by larval abundance and disturbance rather than by competitive interactions. Oysters settled early on and replenished themselves as serpulids and other encrusters followed. [Contribution C-77 of IDEAN].

