FIRST ECOLOGICAL OBSERVATIONS ON LITTORAL MARINE DECAPODS OF ROCKY SHORES OF EASTER ISLAND

BY

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INTRODUCTION AND METHODS

Easter Island is the most isolated and remote territory of the Pacific Ocean, situated at least 2250 km away from the Pitcairn Islands, and at 3500 km from the South American continent (Fernandez et al., 2014; De los Ríos-Escalante & Ibáñez-Arancibia, 2016). There are many literature reports that mention species composition in marine environments on Easter Island, but most studies do not report sufficient details about the sites of collection, and neither is there usually any relevant information about the local community structures in the habitats sampled (DiSalvo et al., 1988; Goddard, 2003; Kensley, 2003; Coloma et al., 2004; Retamal, 2004; Fernandez et al., 2014). The first descriptions of ecological structure for marine environments mentioned species composition in molluscs (Coloma et al., 2004), copepods (Goddard, 2003), and decapods (Retamal, 2004). These respective records are all detailed and based on the presence/absence of species in certain bays of limited extension, but they also are restricted in the sense that they constitute short-term field work. The only, and indeed unique, study based on absolute abundances was done about species associations between crabs of the family Grapsidae (De los Ríos-Escalante, 2011).

On the basis of ecological community theory, a heterogeneous and stable habitat would provide several advantages for the establishment of a more species-rich community (Loureau, 2010). Accordingly, Easter Island can be expected to provide more, and more diverse, microhabitats that thus most probably will allow the presence of different communities, all with their own specific composition (Goddard, 2003; Retamal, 2004; De los Ríos-Escalante, 2011). This would explain...
the marked species diversity in comparison to other Chilean oceanic islands (Fernandez et al., 2014; De los Ríos-Escalante & Ibáñez-Arancibia, 2016). Easter Island was visited on the 20\textsuperscript{th} September 2014, and observations were made on the intertidal faunal community of one rocky beach (Tahai: 27°08′S 109°25′W) and one rocky shore adjacent to a sandy beach (Ovahe: 27°04′S 109°18′W). Specimens of crustaceans were collected, fixed in absolute ethanol, and identified according to the available literature (Retamal, 2004). Also, four specimens of the fish Thalassoma purpureum (Forsskål, 1775), the surge wrasse, a species of rocky littoral habitats, were collected. The stomach contents were removed, and subsequently identified according to the literature (i.e., Retamal, 2004).

The aim of the present study thus is, to give a preliminary description of the crustaceans found on that occasion in the rocky littoral, as well as to report on the stomach contents of those fish collected on Easter Island.

RESULTS AND DISCUSSION

In our field work as reported upon herein, we found live specimens of Cyclograpsus longipes Stimpson, 1858 on Ovahe beach, but we did not observe crustaceans on Tahai beach. Nevertheless, the literature reports the presence of other decapods of the families Grapsidae and Varunidae, such as Geograpsus crinipes (Dana, 1851), Grapsus grapsus (Linnaeus, 1758), Leptograpsus variegatus (Fabricius, 1793), Planes minutus (Linnaeus, 1758), and Cyclograpsus longipes (cf. De los Ríos-Escalante & Ibáñez-Arancibia, 2016). In the stomach content of Thalassoma purpureum, we found in three out of the four specimens collected, Echinometra insularis H. L. Clark, 1912 (Echinodermata, Echinozoa), and in each of the four stomachs we found fragments of Plaxiphora mercatoris Leloup, 1936 (Mollusca, Polyplacophora), Nerita sp. (Mollusca, Gastropoda), unidentified graspid crabs (Brachyura, Grapsidae), and shelters of Polychaeta (Annelida).

These results would indicate that it is necessary to do more detailed studies, i.e., studies that involve retrieving more information about species communities of marine invertebrates, and such mainly in intertidal and sublittoral zones. Such studies should consider each habitat and could be based on the review of Fernandez et al. (2014), complemented with the first detailed reports obtained in the CIMAR-5 expedition (Coloma et al., 2004; Retamal, 2004).

In this scenario, the results of the stomach content analysis would indicate that the species reported in those stomach contents could be referred to sublittoral environments (DiSalvo et al., 1988; Coloma et al., 2004; Retamal, 2004), and would also indicate the trophic preferences of the species studied. Similar results have been reported for comparable fishes of rocky shores in the continental Chilean