



Figure 1. *Eucidaris tribuloides* individuals observed in the Canary Islands: A. Fonsalía (28R-320995 3119580), Tenerife, 17/8/2021 at 7 meters deep (Picture by Michael Schmitz); B. Añaza (28R-373263 3144395), Tenerife, 12/10/2021 at 15 meters deep (Picture by Ramiro Martel); C. Tufia (28R-462880 3093110), Gran Canaria, 19/10/2021 at 22 meters deep (Picture by Antonio de La Rosa).

FIRST OBSERVATIONS OF THE SEA URCHIN *EUCIDARIS TRIBULOIDES* (LAMARCK, 1816) IN THE CANARY ISLANDS. José Carlos Hernández*, Leopoldo Moro**, Rogelio Herrera**, Ramiro Martel and Antonio de la Rosa

The Network of Marine Environment Observers of the Canary Islands (www.redpromar.org) is a consolidated citizen science network (with more than 3000 users) that acts as an early warning network for the arrival of new species in the region, at the same time it also detects local species redistribution. Thanks to this network and during the months of August and October 2021 three individuals

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of the sea urchin species *Eucidaris tribuloides* (Lamarck, 1816) have been observed: two in Tenerife and one in Gran Canaria Island. These are the first observations of this sea urchin species in the Canary Islands (Hernández *et al.* 2013). *E. tribuloides* is restricted to the tropical areas and it can be found at both sides of the Atlantic. On the western part of the Atlantic it can be seen from Rio de Janeiro (Brazil) to North Carolina (USA), being very abundant in the Caribbean; on the eastern part, it has been reported from Ascension Island to Cape Verde archipelago, where it is a common inhabitant of the shallow rocky reefs.

This is the northern most observation of this species in the Eastern Atlantic. However, this species had a common presence in the Plioceno fossiliferous outcrops in Santa Marina Island, Azores (Madeira *et al.* 2011), and Koehler (1895) identified a small specimen sea urchin as *E. tribuloides* among the collected material in Azores at 130m deep. This individual was collected by the Hironde scientific cruise (1885-1888) under the Prince Albert 1st commands. *E. tribuloides* was never seen again in Azores (Madeira *et al.* 2019). The presence of these two specimens in the Canaries is not an anecdotic observation, like Koehler's, but more likely it is a sign of an ongoing process of colonization related with the recent sea water warming process.

Another example of norther intrusion of southern echinoids is the arrival of *Diadema africanum* to the coast of Santa Maria Island in the Azores (Minderlein & Wirtz 2014). In that case, only one specimen was observed. The presence of three individuals of *E. tribuloides*, and on separate islands, can be interpreted as a recurrent process that eventually could generate a population, able to reproduce locally. This is one of the most recent species arrivals, no directly related to maritime transports or oil platforms, which make it a good model case for studying the effects of climate change processes on the Canary Islands marine biodiversity.

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