

NOTE ON MASS OCCURRENCE OF SEA URCHINS ON PATONG BEACH, PHUKET, THAILAND

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ABSTRACT: Aggregations of the red sea urchin, fire urchin, false fire urchin, or blue-spotted sea urchin *Astropyga radiata* (Leske, 1778), Diadematidae, were found as dense bands above the sea-level on Patong Beach, Phuket Island, Thailand on 2nd March 2021. Totally 8 specimens were collected, its morphological characters were confirmed by four specimens, while their digestive tracts as well as gonads of other four individuals were investigated in order to test the hypotheses that the mass occurrence was caused by plentiful food on the beach or if it was due to mass reproduction. The dissected digestive tracts contained of food pellets with densely packed fragments of the red algae, *Hypnea* sp. They grow along the Patong coast at that time. Detached such algae can drift towards the beaches in large quantities during certain winds or currents. Decaying algae could have been detected by the sea urchin's chemosensory epithelia and attracted them for feeding to the shore at high tide. The tide had probably decreased faster than the sea urchin locomotion, so that the emerging sea urchins were trapped when their heavy bodies and spines gradually sunk into the sand. If mass reproduction would have caused the occurrence, the gonads in the different individuals would have been in the same reproductive stage – ripe or recently spent. Histological studies showed that they were in different reproductive stages, so this hypothesis is rejected. The possibility on mass occurrence of *A. radiata* on Patong Beach is they were aggregated for feeding.

Keywords: red sea urchin, fire urchin, false fire urchin, blue-spotted sea urchin, *Astropyga radiata*, stomach content, histological study