

Honeycomb Weathering (Tafoni) of Sandstone and Environmental Factors in Yonaguni Island, Okinawa Prefecture, Japan

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Sandstone surfaces of Yonaguni Island (westernmost of the Ryukyu Arc) often show a honeycomb structure (tafoni) derived from physical disintegration in relation to salt weathering. Miocene sandstone (Yaeyama Group) is extensively exposed on the island surface, and forms sea cliffs along rocky coasts. The honeycomb structure is especially observed along the coasts where wave splashes produce wetting and drying processes assisted by strong wind and active evaporation. The geometry and density of tafoni seem to be controlled by vertical height from the sea level and horizontal distance of the coast line. Field observations at the rocky coasts of Yonaguni Island suggest that larger holes are developed along the north-faced coasts than the south-faced coasts, which depends mainly on the northeastern monsoon during the winter period.

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