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FACIES ANALYSIS OF TITHONIAN-BERRIASIAN LIMESTONE IN TORINOSU AREA, KOCHI PREFECTURE, JAPAN

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The Tithonian-Berriasian Torinosu Limestone crops out at Hitotsubuchi Quarry in Torinosu, Kochi Prefecture, Japan. A carbonate sequence at this quarry consists mainly of approximately 55.5 m thick of floatstone containing branching stromatoporoids, calcareous sponges (*Chaetetopsis*), micro-encrusters (*Lithocodium-Bacinella* complex) and corals, bioclastic wackestone, and arenaceous limestone. It can be divided into two sections. The lower section comprises two units; the lower unit (Unit A) consisting exclusively of arenaceous bioclastic wackestone and the upper unit (Unit B) composed of *Chaetetopsis*-branching stromatoporoid floatstone, passing laterally into wackestone. The upper section is divisible into three units (Units C, D and E). Unit C rests on Unit B with a sharp, undulated contact, indicating probable unconformity. The base of Unit C is characterized by concentration of *in-situ* branching stromatoporoids and clasts of *Chaetetopsis*, which forms a mound-like buildup (ca. 5.7 m in height). This mound passes laterally into and is overlain by floatstone and wackestone. Unit D consists of peloidal-cortoid wackestone that grades upward into mudstone. Unit E is composed of bioclastic and cortoid-peloidal wackestones with an intercalating bed of stromatoporoid floatstone. Megafossils such as stromatoporoids, *Chaetetopsis*, and much less common corals are pebble- to cobble-sized, abraded fragment and do not retain their growth positions except for *in-situ* branching stromatoporoid colonies at the base of Unit C. These megafossils are commonly found in carbonate buildups in other areas within Tethys.

Previous studies showed that a vertical facies change representing succession from initication of carbonate deposition into luxriant growth of large colonial organisms is recognized in other limestones assigned to the Torinosu Limestone. In contrast, the Torinosu Limestone at this quarry shows a cyclic facies change, which suggests that the limestone was deposited in response to two repeated sea-level rises.