Short Note: Well Rounded Kuta and Tanjung Aan Lombok Beach Sand

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Introduction

Coarse, well rounded carbonate sand grains are found in Kuta and Tanjung Aan beach Lombok (Figure 1). These kinds of sands are also common on Sanur Beach and other localities along the East coast of Bali, where many visitors believed them to be ooids (oolites). The grains are generally about 3-4 mm in diameter and well rounded. The colors of the grains are white to light-brownish white. In places they are mixed with coral remain and other small shells which are angular to sub-angular or sub-rounded to oval shape, with generally the same grain size or larger (Figure 2).

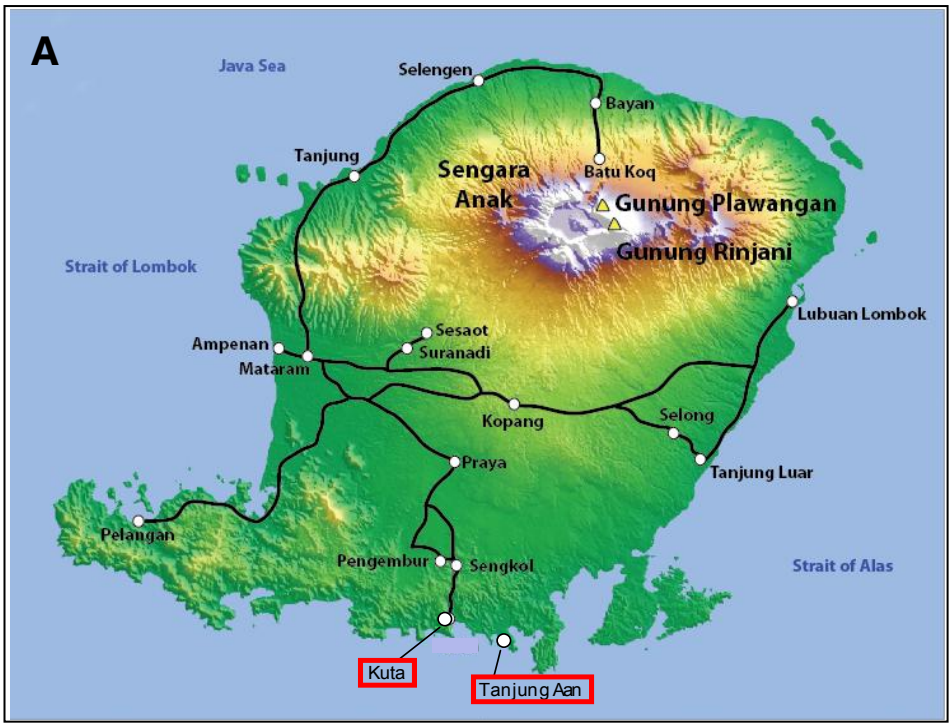




Figure 1.A) *Map of Lombok Island, showing the location of Kuta and Tanjung Aan beach in the south coast of the isalnd.* ***B)*** *Aerial view of Kuta beach, one of the most famous holiday destination in Lombok*



Figure 2. *A photo of the sand grains in Kuta beach, Lombok. The beach sands are dominated by rounded grains, few millimeters in size, with light colors. Source: Wikimedia Common, photo courtesy Midori*

White Beach Sands of Lombok and Nearby Islands

R. P. Koesoemadinata took some beach samples from Kuta, Lombok and evaluated them under the microscope. Figure 3 shows clearly the surface texture of the grain. A thin section of one of the grains (Figure 4) shows it is not an ooid grain, but a larger foraminifer composed of chambers and pillars.

Han van Gorsel identified these as reef-flat foraminifera, first described by Schlumberger (1896) as *Baculogypsina floresiana*, from the south coast of Flores. Today these are generally called *Schlumbergerella floresiana*. Han mentioned that a few papers have been published on these Recent foram sands from Bali, Lombok, Flores, Sumbawa, etc. (Barbin et al. 1987, Adisaputra 1991, 1998, Renema 2003). Apparently these types of sands are also found on some W Pacific tropical island.

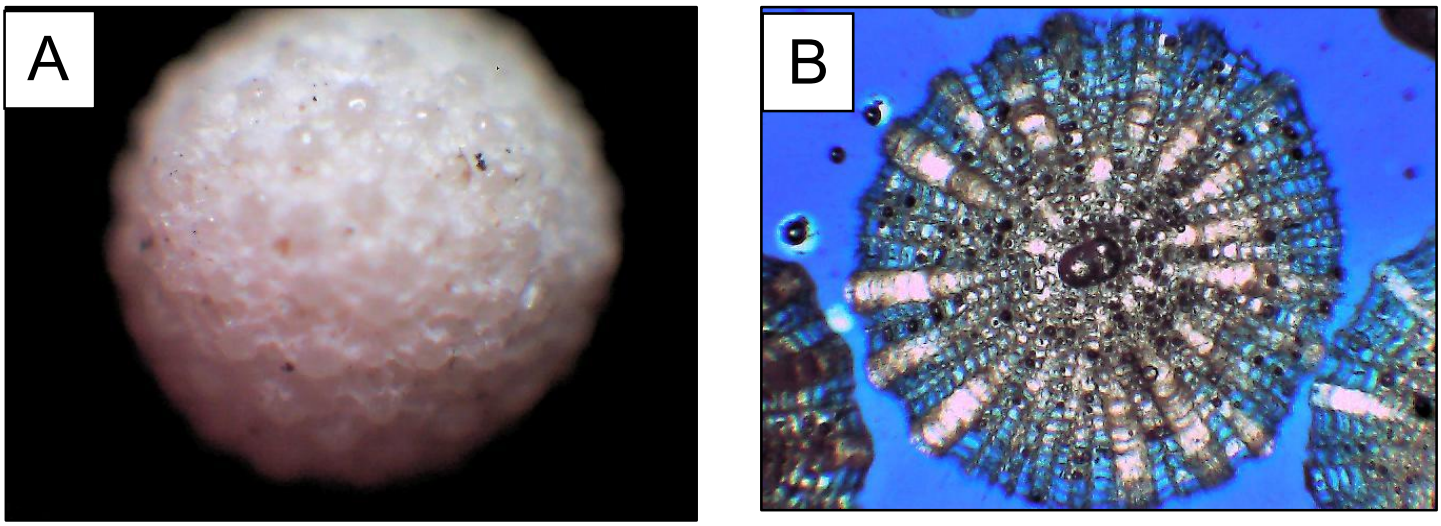


Figure 3. A) *A photo of the grain under microscope and* ***B)*** *A section of the grain under optical microscope. Photo courtesy (R. P. Koesoemadinata)*

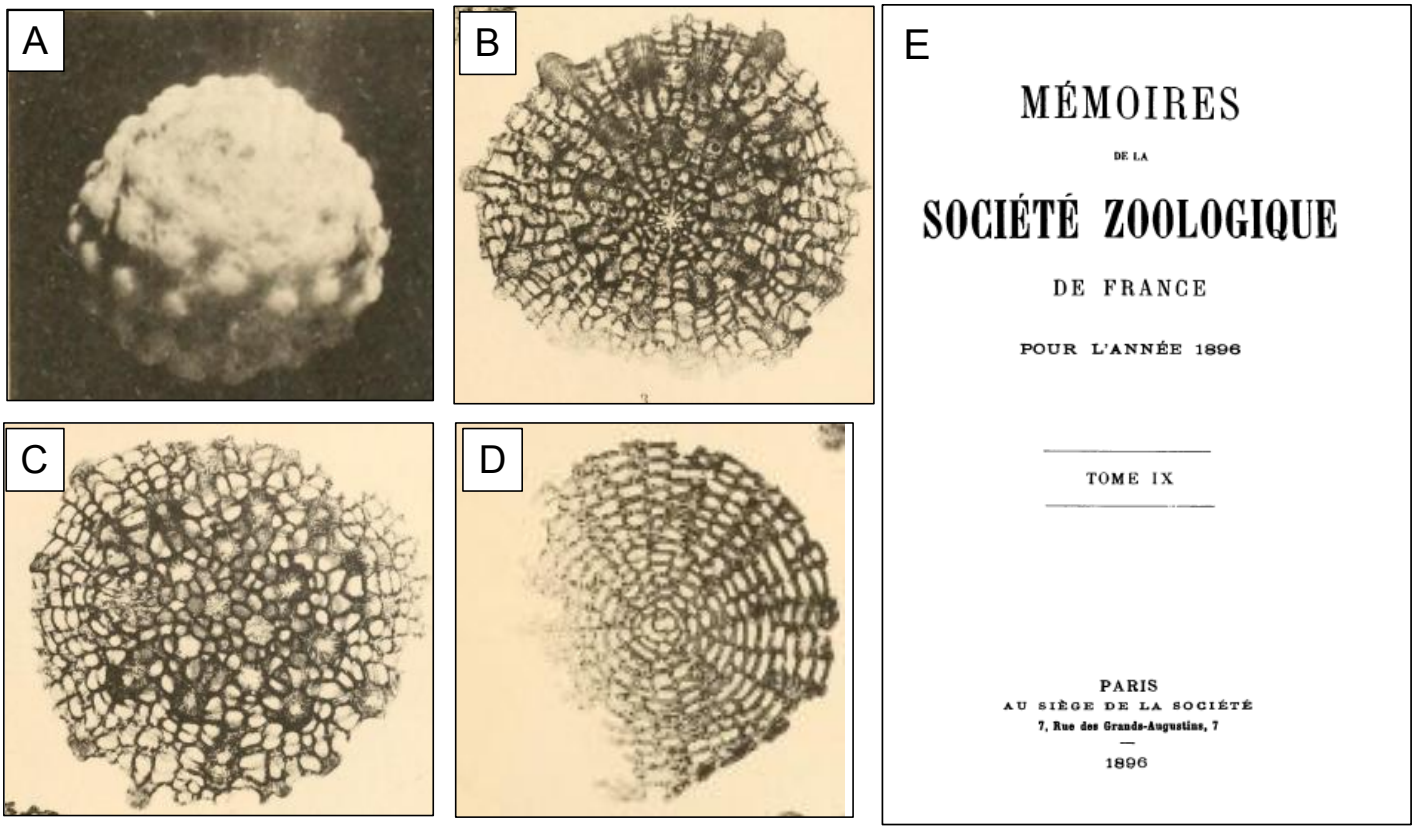


Figure 4. A*) A photo of the Baculogypsina Floresiana Schlumberger under microscope and* ***B****) A section of the grain under optical microscope showing arrangement of the pillars and* ***C****) A section perpendicular to the core.* ***D****) A section of Gypsina globulus Reuss.* ***E)*** *Source: Societe Zoologique, Paris, 1896.*

This sand has also been discussed by Adisaputra (1991, 1998) from the tourism view point. In her paper Adisaputra mentioned that the 'white sands' along the coasts of E Bali, W Lombok, N Sumbawa and S Flores are composed mainly of rounded foraminifera *Schlumbergerella floresiana*, which were derived from adjacent coral reef flats. These benthic foraminifera live in waters down to 90m (Adisaputra, 2000).

The unusual dominance of *Schlumbergerella* on coral reefs of the Lesser Sunda Islands area over the normally more abundant large imperforate miliolid benthic foraminifera in other parts of Indonesia is probably due to climatic or oceanographic parameters, most likely periodic upwelling, which causes seasonal seawater temperature drops (Renema, 2003)

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Remarks:

Related link to the Indonesian Marine Geology Research and Development Centre: http://www.mgi.esdm.go.id/content/panorama-nan-indah-sebuah-aset-wilayah-pantai-dominasi-schlumbergerella-floresiana