



Living stromatolites, built by the cyanobacterium Schizothrix gebeleinii, form enduring modern reef structures

The exciting discovery of modern stromatolites was first reported for high energy habitats in the Bahamas by Dravis (1983), followed by the finding of additional new stromatolite localities (Dill et al. 1986). Recent work by Reid et al. (1995) has demonstrated the widespread abundance of these structures to 2.5 m high (as shown in the photograph) in subtidal and intertidal areas of strong water movement throughout the Exuma Cays, Bahamas. The laminated structures are formed close to the sediment interface by cyanobacterial mats of *Schizothrix* (Reid et al. 1995). The species responsible is *S. gebeleinii* (see inset drawing), described by Golubic and Browne (1996). Tidal currents deposit sands and finer sediments on the mat surfaces. These particles adhere to the polysaccharide sheaths of the *S. gebeleinii*, whereupon the motile trichomes of this microorganism further surround and bind the particles. The inundated *S. gebeleinii* are able to glide upward out of their sheaths, which remain attached to the former sediment cover. The *S. gebeleinii* trichomes recolonize the sediment surface producing new polysaccharide sheaths that trap more particles and strengthen the overall agglutinated structure (Golubic and Browne 1996). High-relief stromatolites are subsequently occupied by algae, invertebrates and fishes, until migrating sand-wave burial eliminates these colonizers and rejuvenates the *S. gebeleinii* accretion process.

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