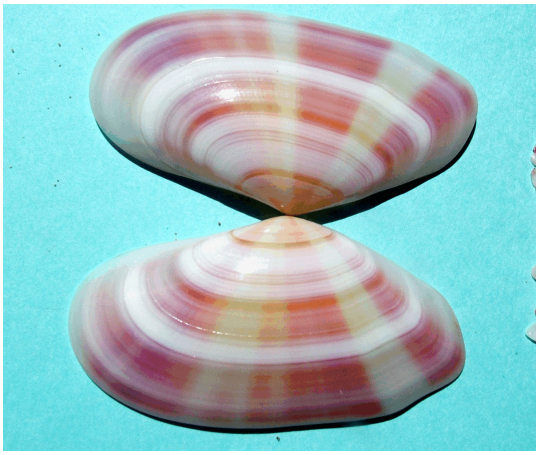
Pink Sand Exposed

By John Mussington

One of Barbuda's best known features is its pristine beaches. Besides the gin clear waters, the "Pink Sand" is arguably that part of the beach that most stand out in the mind of anyone seeing them for the first time. But what exactly makes Barbuda's sandy beaches pink?

Tellina sp Bivalves

On coral islands like Barbuda, sand is formed form the limestone skeletons of corals, marine calcareous algae and other marine organisms. The material is often light coloured and appears white in bright sunlight. Barbuda's white sandy beaches are accented by the occurrence of "pink" sand. Beaches on the windward and leeward side of the island differ greatly in the appearance of this pink material. On the leeward side, pink sand is more common during the calmer months while on the windward coast it can be found year round. It occurs where the onrushing water of the breaking waves lose their forward momentum and roll back down the slope to the ocean. Here the pink accents on the white beach are the remains of zillions of tiny bivalves. Bivalve is the name given to a group of marine gastropods characterized by two wings of shells held together by the muscular foot of the living animal. The bivalves live buried in the sand and they feed by sucking water in through their siphons. Any microscopic organisms that may have been sucked in are filtered out and eaten. There are many species of bivalves and the ones whose skeletons are pink in colour form pink sand on the beach. The particular species of bivalves that are found on Barbuda's beaches have not yet been identified but they are probably members of the genera: ***Tellina*** and ***Strigilla***. These animals have shells that can be described as breathtakingly gorgeous. Paper thin and delicate, they have a natural luster that would put the finest porcelain china to shame. Pictured here is the Sunrise Tellin (***Tellina radiata***) which was found on River Beach on the south coast of Barbuda. Also shown is a close up photo of the bivalves that make up the pink sand of Barbuda's leeward beaches. Being less dense than ordinary sand grains, they settle out on top after being washed up by the breaking waves and thus form their beautiful natural artwork.



Sunrise Tellin Tellina radiata

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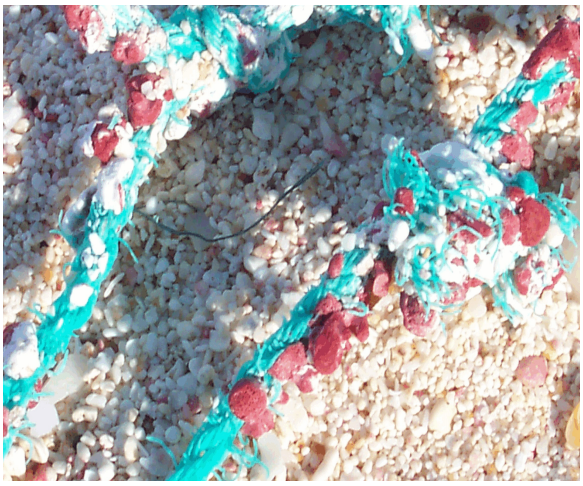
Barbuda, May 2004

Windward Beaches

On the windward shores the pink sand has a completely different origin. Here, the sand grains are on average larger and coarser than those found on the leeward shores. The higher energy of the waves driven by the prevailing trade winds allows them to suspend and carry heavier loads of sand. The organism responsible for "pink sand" here are members of the phylum Foraminifera. It is a single-celled creature called ***Homotrema rubrum***. It has a calcified shell which includes iron salts that give it the 'pink colour. Homotrema grows on many underwater surfaces. When they die the remains get washed up on the beach. The rough waters on the east coast often break off pieces of the organism and that is another means by which they get thrown up on the beach. Although attractive in their own right, the sand on the windward beaches pale in comparison to that on the leeward coastlines.



Homotrema rubrum on pieces of nylon netting.

Threats to our Pink Sand Beaches

Marine foraminefera, and Bivalves in particular, are sensitive to the effects of marine pollution. Continued existence of pink sand will depend on having clear, clean and unpolluted near shore waters. Unpolluted waters will depend on intact mangrove systems, coral reefs and natural beach vegetation. All these are components of the island's coastal zone ecosystem. More importantly, they are all interdependent. If not properly managed, Barbuda's coastal zone ecosystem could become so impacted as to threaten the continued existence of these most important natural assets. Maintaining intact coastal zone systems in Barbuda is a serious challenge. Our biggest threat comes from built developments, the sort of activity associated with hotels and other tourism related ventures. If built without proper care and precautions, such structures often results in the removal of beach vegetation and the clearing of mangroves. The operation of such developments result in the production of effluents and wastes that find their way into the near shore waters where they act as pollutants. The end result of this kind of uncontrolled development is eroded beaches, murky near shore waters and denuded beaches. The pink sand organisms will not likely survive in such conditions. It is ironic that the pink sand beach is a major visitor attraction but the kind of tourism our country has traditionally favoured involve placing built structures right on the beach. This practice threatens the very existence of the beach and quite often we end up with the hotel but loose the beach.

The solution, build the hotels elsewhere and leave the beach for the enjoyment of everyone now and those who will come in the future. The Caribbean Regional Environment Programme (CREP) intervention will assist Barbudans to achieve this end. Our best pink sand beaches will be part of the Codrington Lagoon Protected Area. As such they will be protected and preserved for Barbudans and their guests. Opportunities will be created for persons to make a living while preserving those critical resources for anyone who wishes to relax and enjoy the spiritual replenishment of watching a sunset or sunrise in surroundings that are the closest to how it might have been when only the Tainos knew these shores.

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