

No 09

## Coral Gables waterway at Coco Plum Circle (intersection of Lejeune/Sunset/Old Cutler)

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### Location and access

Go to the traffic circle where Lejeune Road, Sunset Drive, and Cutler road all meet (due east of the center of South Miami). Limited parking is available on the NE side of the circle. From here there is a nice view of the cut on north side of the canal (best examined with binoculars). The outcrops are under the Lejeune road bridge. It is necessary to climb over the railings near the gate to get access. I have done this with permission of the Coral Gables Police, who were present at one of my visits, so I suppose it is not a problem, but it probably not a good idea to do this with a large group.

### What there is to see

Miami oolite and its bedding structure. Cross bedding. Post-depositional modification by burrowing organisms.

### Background

The Coral oolitic facies of the Miami Formation is exposed in a small cliff near the waterfront. The cliff is cut into one of a series of oolite sandbanks that extend from Coconut Grove to Cutler ridge.

### Rock type(s)

The rock is a white to cream-colored rock composed mainly of spherical grains and shell fragments. It effervesces when acid is applied, indicating that the grains are composed of calcite (calcium carbonate –  $\text{CaCO}_3$ ), and therefore the rock is a limestone. This particular type of limestone, composed of grains cemented together, is referred to by sedimentologists as a *grainstone*. The majority of fragments are nearly spherical sand grains called *oid s*. A grainstone composed predominantly of ooids is termed an *oolite*. Microscopic examination shows that these sand grains are made up of concentric layers around a small central nucleus of either shell fragments or small quartz grains.

Fossil studies and uranium-lead dating indicated that the limestones of the Miami Formation were produced in the Pleistocene epoch, about 125,000 years ago – very young by geological standards.

Mapping of the oolite shows that it made up a continuous *oolite bank* that forms the Atlantic Coastal Ridge which is in the eastern parts of Miami-Dade and the southern part of Broward county.

The oolite at this location contains a number of fossils as grains within the rock. A larger than normal fossil of a queen conch (genus *Strombus*; Fig. 1) can be seen on top of the second spur to the north on the outcrop.