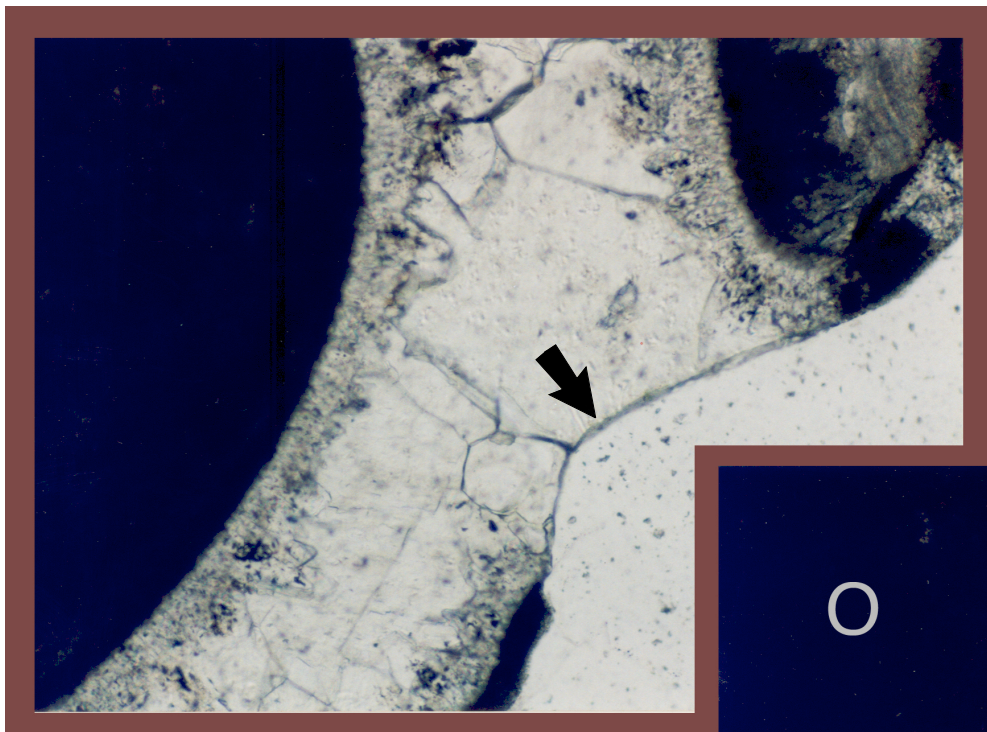


Nucleation vs. syntaxial overgrowth III: an example from a sandy limestone

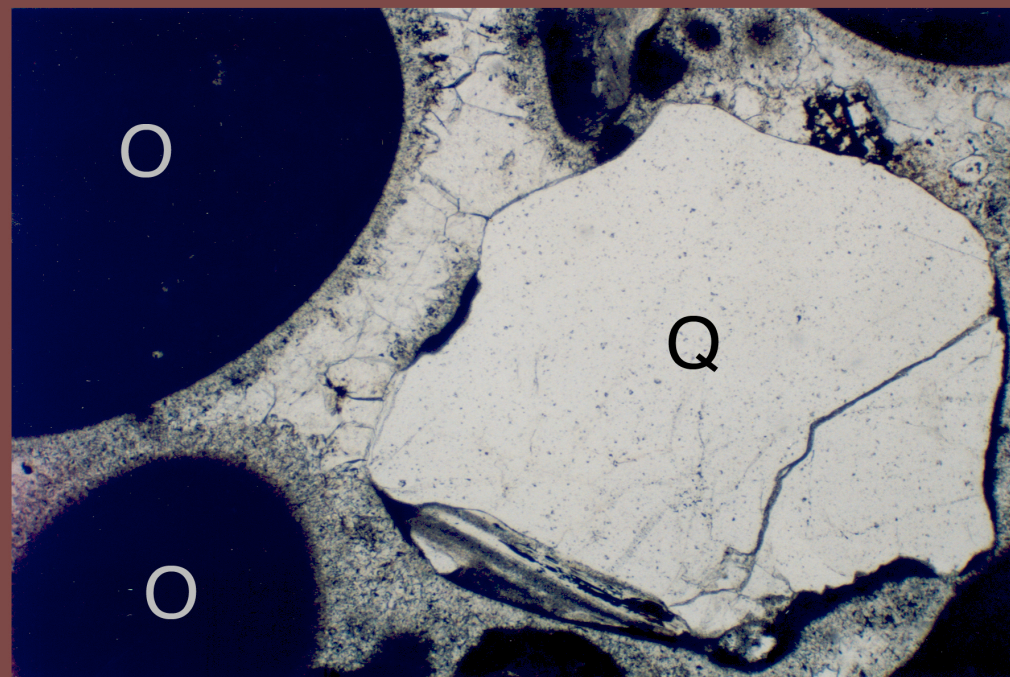
These photomicrographs show a limestone with a few quartz sand grains. In this view, the round dark grains are grains of microcrystalline calcite that are perhaps micritized ooids (O). One quartz grain (Q) is evident too. That quartz grain has, in a few places, a coating of opaque microcrystalline calcite, but much of its surface is clean.

The limestone has two generations of cement. The first to form was a fringing cement (F) of small elongate crystals. The second to form consists of equant calcite (E) that fills most of the intergranular space.



F E F

1 mm



With the introduction above in mind, look at the distribution of the fringing cement (F). It rims all of the surfaces of microcrystalline ooids (O). It is also present on the quartz grain (Q), but only where the quartz grain has a rind of microcrystalline calcite. We thus get to the relevance of this example to nucleation and overgrowths: the fringing cement is present only where a substrate of carbonate mineral was present. On the quartz surface devoid of microcrystalline coating, as at the arrow, no fringing cement formed, presumably because there was no carbonate substrate on which cement crystals could form an overgrowth.