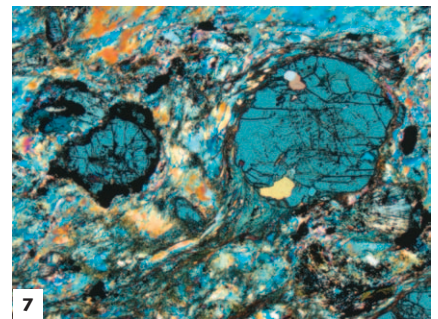
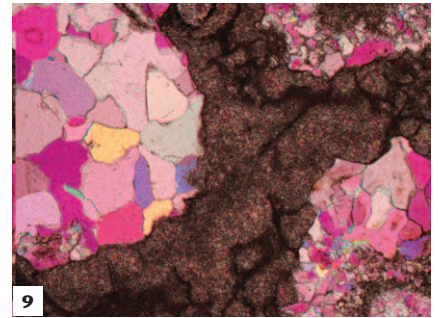
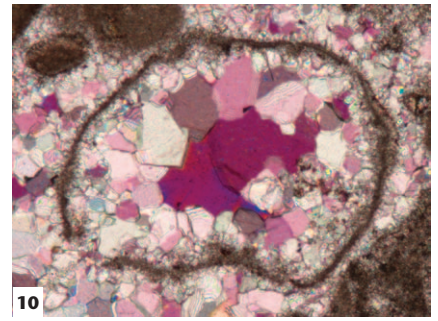
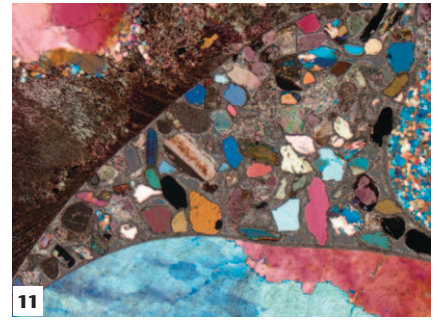
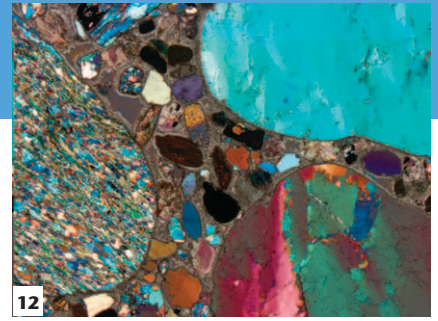
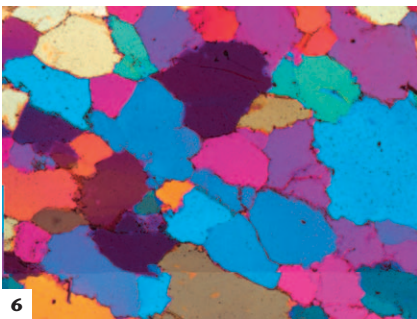
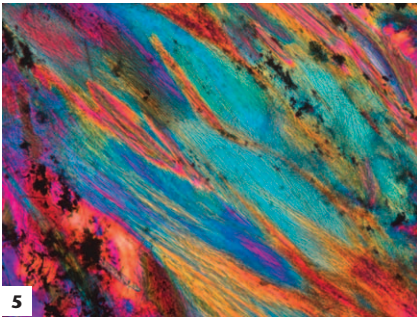
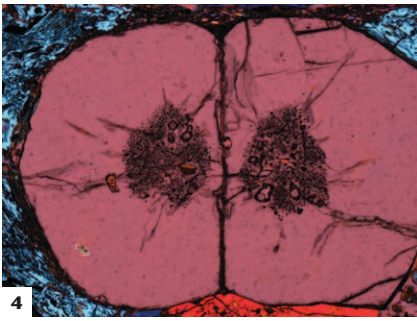
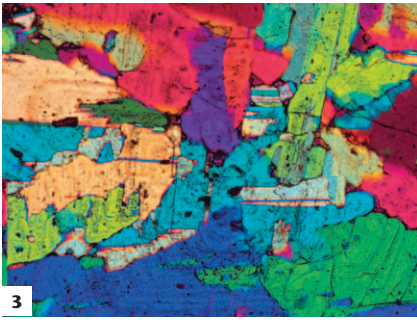
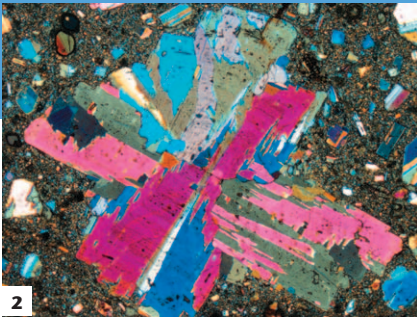


ON THE BEACH



Mainly intended to entertain you with some colorful photomicrographs, this page is also a way for me to thank Maria Teresa and Juan Carlos for a fantastic vacation. Think about the song by Chris Rea and relax: we travel to southern Spain and the stones on the shore at Carboneras. People shouldn't be misled by the place name: yes, there's a coal-fired power station right outside the village, but this is the only downside against a long list of assets that includes climate, culture, crystal-clear sea (**photo 1**), the amazing Cabo de Gata – Nijar National Park and, why not, food and drink. The geology of this area is equally exciting, and the rock types are so diverse that I decided to collect some beach pebbles for a photomicroscopic reportage.



Porphyritic andesite is by far the most common rock on the beach (**2, 3**) and forms most of the 200 km² Miocene volcanic field of Cabo de Gata. This rock was extruded in the Miocene, followed by garnet-cordierite-bearing dacites (**4**). The gravel also contains metamorphic rocks from the Alborán Domain: such as high-grade metapelites (**5**), quartzites (**6**), schists, and mylonites (**7**). The abundance of highly tectonized rocks is not surprising: along with the ductile imprint of subduction and exhumation on the crystalline basement, a widespread cataclasis occurs near the Carboneras fault (**8**), a lithospheric-scale, still-active structural element in the region. Thus, tectonic breccias add to those that occur primarily in the sedimentary strata of the neighbouring Neogene basins (**9, 10**). All the above rock types, and many others, are cemented together in beautiful beach conglomerates (**11, 12**), which formed all along the coast during the last rock-forming event in the Pliocene.

I had thin sections made from the pebbles and took photomicrographs: the images in this article are a glimpse into the marvelous, small world hidden in these rocks. The pebbles are the “artists”: I just help them showcase their best colours. And this is the power of polarized light, not of Photoshop!

Bernardo Cesare
University of Padova, Italy
www.microscopica.org