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 km$^2$ 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!

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