



MILOS MINING MUSEUM



Prehistoric Quarries, Techniques, and Tools

What exactly is the volcanic rock called obsidian?

Why did the prehistoric Aegean navigators travel to Milos for thousands of years to acquire this “exotic” raw material to make their stone tools?

The exhibit of the “Zafeiris Vaos Obsidian Collection” in the Milos Mining Museum invites you to a journey in the history of this distinct rock, from its formation during the volcanic eruptions on Milos, to its discovery by the prehistoric Aegean fishermen 11,000 years ago; its systematic quarrying and transportation from its natural sources over large distances for the manufacture of tools and weapons, until the end of its use 3,000 years ago.

The collection

of the Melian folklorist Zafeiris Vaos comprises numerous artifacts both from the prehistoric obsidian quarries and various surface findspots of the island.



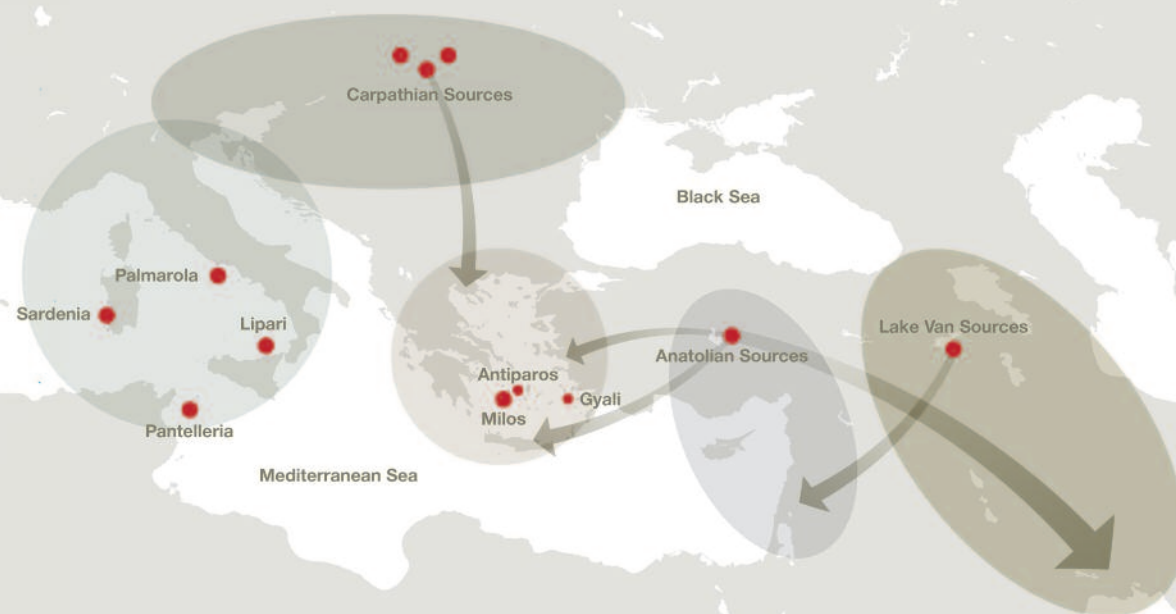
The rock

was formed during the volcanic eruptions of the Quaternary Period, 1.4 Mya. When acidic siliceous magma cools over rapidly it forms a glassy non-crystalline rock. At the rhyolitic deposits of the Melian volcanoes, at Bombarda and Dhemenegaki, black semi-translucent obsidian of excellent quality is present.

The sources

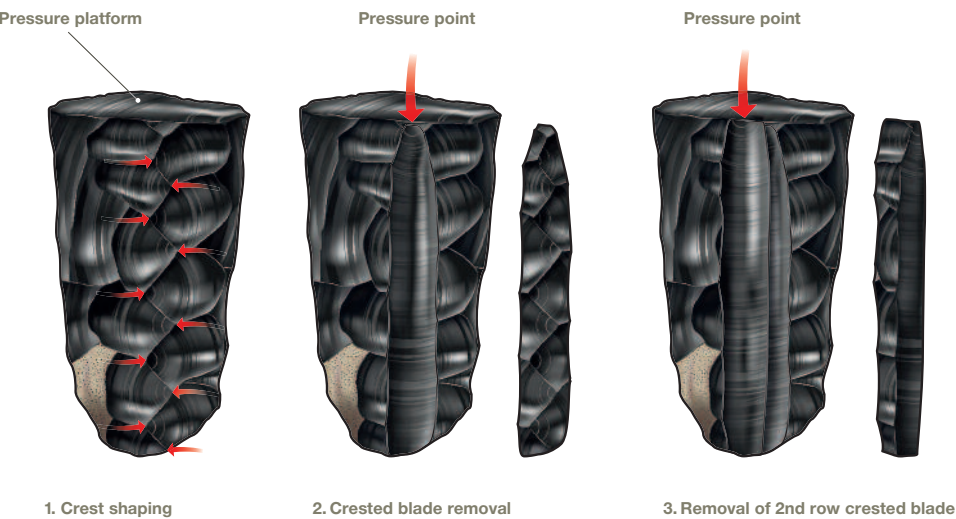
In the western Mediterranean and the Aegean Sea only a few obsidian sources can be found, all of which are located on islands. In the Aegean Sea, obsidian deposits exist on Milos, Antiparos, and Gyalí. Only the Melian obsidian, however, is suitable for the manufacture of tools. Obsidian has a homogenous composition, which allows us to determine its source of origin accurately.

The geological source of the obsidian artifacts used in prehistory can be determined with the help of geophysical analytical techniques. Knowing the location of the obsidian sources allows us to reconstruct the “circulation routes” and the distance of the archaeological sites that used it from its geological sources.



Obsidian exchange routes in the Mediterranean and adjacent regions

Stages of preparation of a pressure core



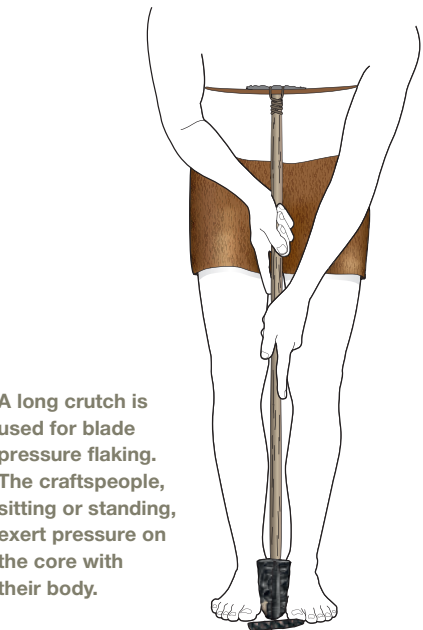
The knapping techniques

of Melian obsidian were primarily suited for the manufacture of blades, which are a kind of long and sharp knife. Prehistoric obsidian knapping techniques improved through time, resulting in the production of regular and extremely sharp blades. In order to produce these blades initially the natural rock is shaped into cores –typically conical in shape– which are then knapped using either percussion or pressure flaking. The latter is the most advanced blade manufacturing technique and during the 3rd millennium B.C.E. it became the dominant technique in the Aegean.



Tools

are produced by retouching flakes or blades. Some of the most characteristic tools are the arrowheads and spearheads of the collection, as well as the sickles, perforators, and scrapers.



At the Melian quarries

Millions of core preparation waste debris and numerous blade cores at the initial preparation stages have been found at the site of Nychia, close to Adamas, and at Dhemenegaki, on the east coast of the island. These waste products help us to “read” the gestures of the prehistoric craftspeople, to understand how they organized their work at the quarries, by testing the quality of the raw material and preparing the cores, which they would later transfer to distant settlements in the Aegean, mainland Greece and Crete.



Obsidian travels

Initially obsidian was transferred from Milos to various settlements with small boats with oars, and after the 3rd millennium B.C.E. with the more advanced sailboats of the Early Cycladic cultures. Throughout prehistory the complex networks of exchange and interaction that were in place were responsible for the circulation of products and raw materials, such as metals and obsidian. The natural beauty of obsidian and the skill required to knap it into prismatic blades, gave it a special social connotation.

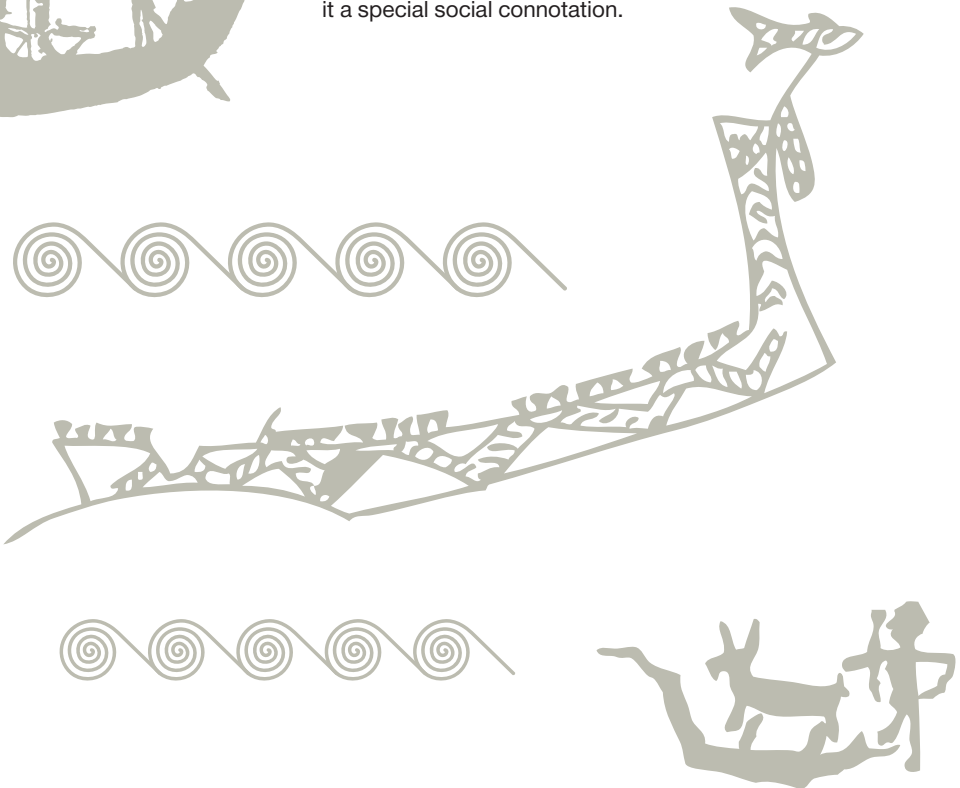
From the Mesolithic period and until the end of Aegean prehistory with the destruction of Mycenaean palaces, obsidian was the most coveted rock for stone tool production reaching settlements of up to 400 km away from Milos. During the historical period obsidian was used in smaller quantities mainly for the decoration of statues, the manufacture of vessels, and even in “magical” medical recipes until the Early Christian period.

At the prehistoric settlements of Milos

obsidian was used for the production of blades and tools. After the 5th millennium B.C.E., during the Late Neolithic period, the first permanent settlements were established on the island. The town of Phylakopi, on the northern coast of the island, is one of the most important sites of the Bronze Age Cyclades.



View of the Phylakopi fortification wall from the South





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