

MA07ES

67001

Carboniferous outcrop of s'Hort de sa Cova

Location



Municipality: Valldemossa

U.T.M. coordinates (31N ETRS89): X: 463137
Y: 4395458



Difficulty and duration



45min
from the end
of the track

Access

On the road to Port des Canonge, take the dirt track leading off to the right at 2,5 km from Port des Canonge (indicated by a wooden sign). The track ends at the entrance to a quarry. Take the path that goes down to the right. This is a private track of public use, so even though there are barriers they permit passage. After crossing a small stream, the track becomes a path that goes around a property and then reaches the sea. Follow the coast in a NE direction for approximately 400 m.

Principal interest

Stratigraphic

Secondary interest

Sedimentological, paleontological

Description of the locality

At S'Hort de sa Cova there lies the outcrop of the most ancient materials forming Mallorca, which correspond to the Carboniferous period, (359-299 Ma), although their precise age has not been established. This site has a clear affinity with the Carboniferous of Menorca.

Although it is relatively easy to reach the zone, located on the coastal cliffs, the small dimensions of the deposit and its distance from inhabited areas meant that it remained unnoticed until its publication in 1984.



Panoramic view of the outcrop: red colluvial deposits of the Quaternary, grey metapelites of the Carboniferous and conglomerates and sandstones of the Permian.

The carboniferous outcrop is covered by reddish-brown deposits from the Quaternary (2.55 Ma - present) to the north-west, contacting by means of a fault with the violet materials from the Permian (299-251 Ma) to the south-east. The latter are abundant in this part of the coast and consist fundamentally in conglomerates and sandstones of a maroon-red colour.

The Carboniferous materials, with a dark grey colour, consist in a type of metamorphic rock called metapelite, which proceeds from the metamorphism of clays.

In the outcrop it is possible to detect some evidence of metamorphism, such as the presence of seams of quartz and tightly-closed folds. However, this is a low-degree metamorphism because it has permitted the conservation of some fossils: these are fundamentally continental plant remains which were dragged and deposited in a marine environment. There are also a few remains of crinoids.



Seams of quartz (left) and fold (right) in the metapelites of the Carboniferous.

It should be noted that the folds displayed by the materials of the Carboniferous were generated during the Hercynian Orogeny and not the Alpine Orogeny which created the Serra de Tramuntana. This orogeny marked the formation of the super-continent Pangaea during the Permian and was the cause of the formation of large mountain ranges like the Appalachians or the Urals. In fact, during this period, Iberia and North America were linked, so the reliefs existing in Spain from that time are in reality the continuation of the Appalachians.

Leaving to one side the Palaeozoic site, and coinciding with the access to the coast, there is another type of materials worth highlighting: a powerful deposit of conglomerates from the Quaternary, which show that in the past the Torrent des Cable which originated the Cala de S'Hort de sa Cova had a much greater flow of water than in the present day, and also that a travertine flow formed at the exit of the spring of S'Hort de sa Cova, at the base of the conglomerates.



Travertine flow (left) and associated deposit of conglomerates (right).

The formation of travertine flows is a relatively fast geological process, often linked to waterfalls (where the pressure of carbon anhydride decreases drastically), so their morphology is bell-shaped. Because the flow of water, and therefore the precipitation of travertine, varies throughout the year, successive flows progressively overlap which change the relief of the waterfall itself. During its development, plant remains are often trapped and finally decompose, leaving their moulds, which give the rock a very porous appearance.

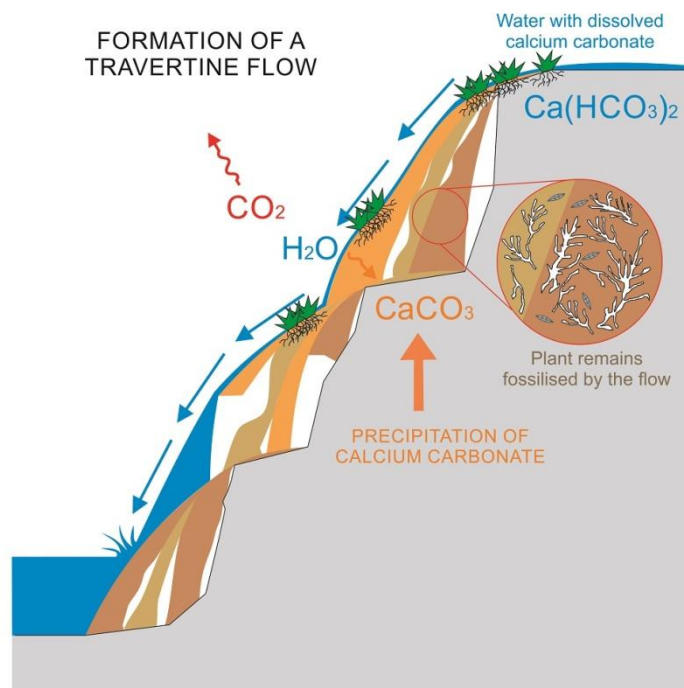


Diagram of the development of a travertine flow.

For more information

Rodríguez-Perea, A. & Ramos, E. 1985. Presencia de Paleozoico en la Sierra de Tramuntana (Mallorca). *Bolletí de la Societat d'Història Natural de Balears*, 28: 145-148.

Recommendations

It is advisable to take a hat, water and comfortable footwear. Take special care when walking on the rocks because they tend to be very slippery.

The SGI can be visited all year round, excepting the days of storms from the north, which prevent access to the coastline. If you visit in summer you can enjoy a swim at the beach.

Do not miss the Font de sa Cova located near the Torrent des Cable (which you cross by a bridge on the path to the sea). This is a *qanat* or gallery spring, of which we can observe the catchment pit (to the right of the path) and the gallery that passes under the stream.

It is recommended to follow the Itinerary of Geological Interest of Sa Volta des General which is nearby (Port des Canonge).