

Information about the Environment and for travellers in Crete:

3 new tunnel & road enlargement defuse the route: Geological excursion from Vrisses via Askifou to Chora Sfakion

From the village centre in *Vrisses* follow the main street southward towards *Askifou/Sfakion*. Between *Metochi* and the branch towards *Alikambos* one has a good view on the *Lefka Ori* and the Chaniotic low mountain range. With clear view (above all in the morning) one well recognizes the bright marbles of the Tripali unit within the summit range of the *Lefka Ori*, which gave these the names „White Mountains“.

The road to the Askifou Plateau and to the south coast (Chora Sfakion) was built after the 1st World War. There were only edge ways before to the area of the Sfakia (and shipping connections). In the years that followed until 1980 the road has been widened from the North to Askifou and afterwards also from the South; the technically most difficult range south of Imbros (with the building of 3 tunnels; see fig.) has begun in January 2008 - and finished in March 2009. The old edge path towards the Askifou Plateau is still good to recognize at several points, particularly in the Katre-Canyon, west of the current road. From Imbros to the South it runs through the Imbros-Canyon, which is used today as hiking trail (about the Imbros Canyon see also our leaflet No. 261-08/E at: [http://www.kreta-umweltforum.de/Merkblaetter_en/261-08E.pdf]).

Above the large hairpin curve Tripali marble is developed. At the top of the pass (at approx. 800 m) is the border of the Eparchie Sfakia. At the parking lot of the pass (N 35° 17,84; E 24° 11,41) one has a good view into the Askifou Polje. The soil of this large karst basin is flat and filled with young sediments. The surrounding mountain ranges have a height of approx. 1.500 m. By the edge of the Polje one recognizes detrital fan, partial with stream-cuts; on the left one sees the ruin of a Turkish castle (KULL, 2012). The bright to grey-blue Tripali marble (dolomite marble) forms the rocks at the road. Individual banks are dainty banded; this is interpreted by KULL as stromatolite formation. Occasionally chert and hornstone cords occur, therefore this stratigraphic sequence has been classified to the Aliodes formation, which however is hardly likely. Fossils from this area are described: the shell *Myophoria whateleyae* (see fig.: *Myophoria sp.*) and the lime algae *Paleodascycladus mediterraneus* and *Discocladella cretica*; thus it must concern a flat navy formation. The metamorphosis degree is undetectable, since facies determining minerals are missing.



From Petres it continues to Imbros. The karst basin of Imbros is reached over a small rise. North of Imbros a narrow road branches towards east to Asfendhou, by which one can reach a cave with scratch designs; therefore see in addition our leaflet No. 310-09/E at: [http://www.kreta-umweltforum.de/Merkblaetter_en/310-09E.pdf]

South of Imbros (towards Sfakia), besides of the road enlargement, the building of 3 road tunnels took place during the past years; see in addition the following illustrations to the individual building phases.



Start of the work in January 2008 with log of the trees and preparations for the 1st tunnel opening; the picture left shows the formerly closest place on the route



In March and April 2008 work began on the opposite side of the tunnel to obtain a break-through; Fig. right: the break-through is created.



In July and August 2008 the southern, 3rd tunnel is artificially developed and integrated into the landscape.



In March 2009 all 3 tunnels are done

Tunnel pictures: *Maria Eleftheria*, Crete



Behind the 3 tunnels the road towards Sfakion runs downwards in numerous hairpin curves; here are also light-grey Tripali marbles developed, which often differ by bad embanking from the disk limes. One arrives then at the enormous detrital fans east of Chora Sfakion, whose structure in the gravel pits is to be recognized close of the road. The various middle grain size and the different portion of fine material in the crushed stone situations points to multiphase system of the development within the Pleistocene (see fig.), which is attributed to the change by cold and interglacial periods. At its basis the detrital fan is attacked by the erosion of the coast; an indication of „recent elevation“.

For further information about the area of the Sfakia see also our leaflet No. 277-08/E at: [http://www.kreta-umweltforum.de/Merkblaetter_en/277-08E.pdf].

Information about the other tunnels on Crete can be found at our webpage at: [http://www.kreta-umweltforum.de/Merkblaetter_en/213-07E.pdf].

References: KULL, U., 2012: Kreta - Sammlung geologischer Führer, Bd. 107; Exkursion 25: S. 241 -247; Gebr. Bornträger, Stuttgart.