


Informationen zur Umwelt und für Naturreisende auf Kreta:
Information about the Environment and for travellers in Crete:
Geological structure of Crete (short sketch)
Lefka Ori (White Mountains)

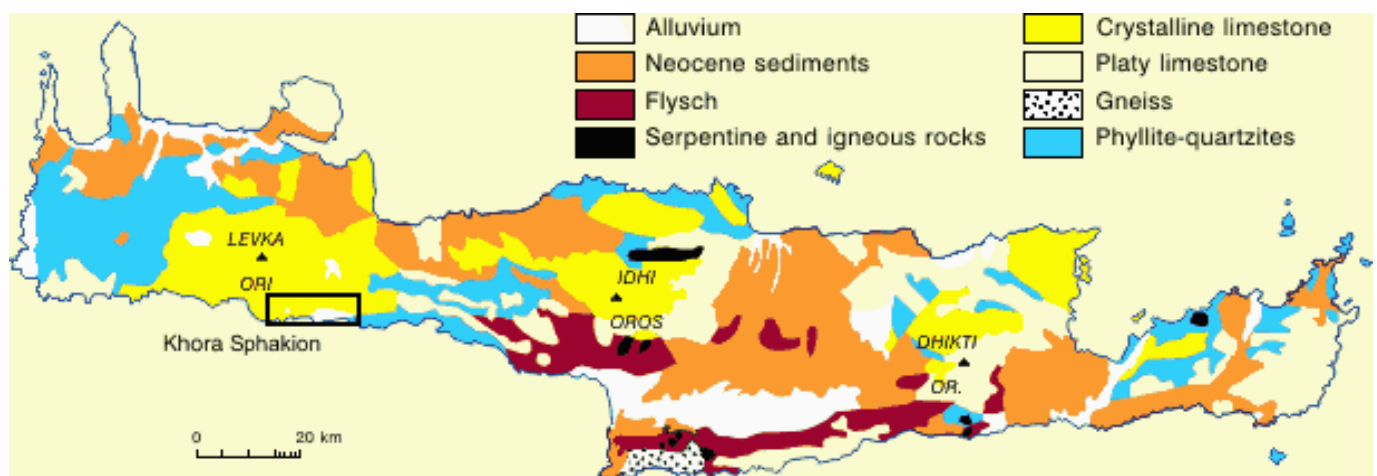

1) **All geological floors of the South Aegean Island Bridge are exposed in Crete.** The autochthonous platter lime, so the deepest floor, are present on Crete primarily in recent surveys of the island. Shares from the age of the upper Carbon / lower Permian were described in *Talea Ori* West of *Heraklion*. Here dominate usually flat-marbles with Jasper layers, which probably come from the age between Jurassic to the early Tertiary, which turn into “Flysch” in Eastern Crete (originating from the lower Oligocene). Distinctive for the consequent Phyllite-quartzite series of East Crete, the first allochthonous floor, are variscan base mountain filings that are engaged in the rather young Palaeocene triad order (through shear during the orogeny).

The massy lime and dolomite of the second allochthonous floor, the “Tripolitza-series” of the upper Triassic until the early Tertiary, border at the Phyllite-quartzite series or overlay the allochthonous stones, for example within the *Psiloritis* massif.

The deposition of carbonate rocks of “Tripolitza series” begins in the late Triassic. They show steep cracks and distinct Karst forms. In the mid-to upper Eocene it be replaced by a marly “Flysch”.

The third (3rd) allochthonous floor is represented by stones from the Pindos-Series (upper Triassic – early Tertiary) within small shield remains and drifts. It is characterized by a position changing of flat, chert leading lime with marls and clay rocks from the late Triassic and bright, flat limes with few chert stones from the early Tertiary.

The Ophiolite occurrences of the top floor are almost all located in Central Crete. They are bound to ditch structures.



“Crete was part of the South Aegean mainland which stretches north of today's island until the Middle-Miocene.”

The continental sediments which arose during the last Pliocene transgression in basin layers are from very different ages. They start by gearing with marine sediments and mammalian faunas in the Serravallian and end in the Turolium In the high Serravallian or the early Tortonian the area of the island turned into a

“Horst-ditch-mosaic” by block tectonics and large parts of the South Aegean mainland sank and flooded by the sea. The tectonics seems to have stabilised during the period of transition between Tortonian and Messinian. At the same time a general countersink took place.

Marine sediments spread during the Pliocene. In Eastern Crete a staircase of surge platforms arose where relics of marine sediments from relatively large depths remain.

In the late Pliocene until the early Quaternary, Crete learned a Northern tilting and raising, which led to today's situation with its outline.

Too above mentioned see also the info leaflets No. **011●04**, **036●04**, **040●04**, **069●05** and **071●05** (Fossil find spots on Crete (Miocene)), **017●04** (Geotope on Crete), **043●04** (Omalos Plateau (Polje)), **054●04** (Geomorphology of Crete) and **063●05** (Trigonometric connection Crete – Africa) at www.kreta-umweltforum.de and also EIKAMP, H. & KLUGE, U. (2002): Fossils on Crete – FOSSILS, H. 5: 261-262; Goldschneck-Verlag, Korb.

¹⁾Source: A. RUMPLER (www.amleto.de/kreta/exkursi/referat01.htm)

Literatur: JACOBSHAGEN, V. (1986): Geologie von Griechenland – Beitr. Regional. Geol. Erde, Bd. 19; Berlin/Stuttgart.

Source of fig. geol. map: University Manchester (www.art.man.ac.uk/Geog/fieldwork/crete/maps/geology.htm)

Lefka Ori (White Mountains)

Three big mountains dominate the island with its cross foothills: *Idi*-Mountain in Middle-Crete, the *Dikti*-massif in the East and the mountain massif *Lefka Ori* in the West.

The White Mountains (*Lefka Ori*) arise behind Chania and fall off behind *Sfakia* towards South to the Libyan Sea. A view of the White Mountains is especially beautiful in spring and winter, when the mountains are covered with snow and live up to their name. There are over 40 peaks of over 2000 m altitude. *Sfakia* has the highest peak with *Pahnes* (2453 m), followed by *Troharis* (2.409 m) and *Kastro* (2218 m). The *Lefka Ori* accommodate many gorges (Samaria Aradena Imbros, Kalikratis to name a few) and provide good opportunities for hiking and mountain tours.



The picture left shows the White Mountains still covered with snow in May 1942; in the foreground of the image "Women on the fields". The fig. right shows the Lefka Ori in February 2004 with "masses of snow"; in the foreground "just for one day"

Pictures: left: unknown German Soldier; right: *Brigita Kristel*, Dramia

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