

Informationen zur Umwelt und für Naturreisende auf Kreta:
Information about the Environment and for travellers in Crete:

Fossils find spots on Crete

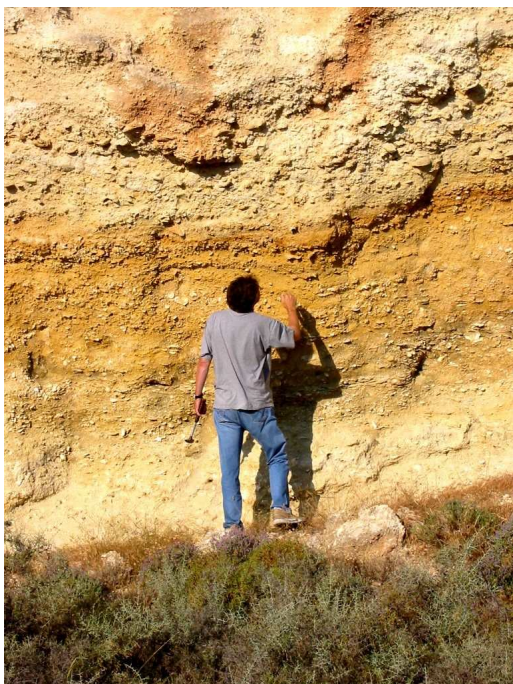
Fossil find spot *Gouves* (Miocene), Prefecture Iraklion / North Crete)

Some articles have already been published about the history and geology of Crete, in particular about the North-East Crete and the Miocene; e.g. KEUPP, FOSSILIEN-Heft No. 2/1998, 1/2000 and 1/2002 (German). The Miocene sedimentation cycle shown in these subscriptions, with its consistent limy Bioclast facies represents a low level marine, partly near-coastal development that applies to certain areas of Central Crete. It is here the dominating facies element of the "upper" or "younger"-Miocene. Polymictic conglomerates appear locally on the basis. They are replaced by yellowish carbonate sands which are characterized by a rich fossil appearance. Higher sections of the liminal growth are dominated by fossil detritus lime. This leaflet informs about an impressive outcrop near *Gouves*. For more information about similar outcrops in the north and south of Central Crete as well as the geology/palaeontology in general see www.kreta-umweltforum.de/indexd.htm (currently in German only): category "Palaeontology", 3 leaflets about fossil find spots at Crete and Geology 3 subscriptions: soil morphology, springs, creeks and rivers and geotope.

The place of finding close *Gouves* can be reached by the "Old Road" from *Iraklion* to *Agios Nikolaos*. Take the last exit on the right side at *Gouves* (direction to *Kato Gouves*) and then the road towards the old NATO radar station. After about 500 m pass the bridge (which crosses the "New Road" *Iraklion - Agios Nikolaos*) and further on the road until a sheep and goat farm is visible on the left. Turn left in front of the Farm and follow the road up the hill towards the Radar station. The place of finding is reached after around 1 mile on the left side, something about 200 meters in front of the first left bend on the hill. It is a 50 m long embankment close to the road and not overlooked. The outcrop is about 50 meters long and within a 4 meters high, vertical embankment. The particular multilayer grounds are clearly separated from each other (bright conglomerate, yellowish carbonate sands and bright fossil-lime). They are 1,3 meters thick in average and vary only at the fault zones (according to the angle of ascent). The fossil content of the outcrop consists of foraminifers, Bryozoa, Brachiopods and Gastropods. Within the contact area of the bright conglomerates to the yellow carbonate sands, Pectinidae are occasionally found. Large oyster shells (*Lopha / Ostrea*), often bigger than 10 cm, dominate the transition area of the yellow carbonate sands to the above bright fossil debris lime together with occasionally encountered packages from barnacle (*Megabalanus*). The preservation of substance of the fossils is generally very good; while the thin-shelled fossils (e.g. Pectiniden) require a "tentatively recovery".



Picture left: The "Mickey-Mouse-ears" of the old NATO Radar station (symbol of *Gouves*) are "Roadmap and direction indicators" to the place of finding. It's less than a mile from the place of finding to the peak. The figure right shows the outcrop where the bright conglomerates delineate from the yellow carbonate sands, characterized by a rich fossil appearance. Above are bright fossil debris limes, also containing many fossils.



The single layer packages are clearly delineated from each other. At the top of the fossil debris limes, at the fault zones, pay attention to "hang over", which can detach easily. Figure above and left show 35 million years old oyster shells out of the yellow carbonate layer. Fossil oysters are the majority of finding at this place.

Pictures: *U. Kluge* (2002)

Literatur (German):

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- KEUPP, H. (1998): Miozän-Fossilien aus der Provinz Chania/NW-Kreta. - Fossilien, **2/1998**: 100 - 108; Goldschneck-Verlag, Korb.
- KEUPP, H.; BELLAS, S.; FRYDAS, D. & KOHRING R. (1994): Aghia Irini, ein Neogenprofil auf der Halbinsel Gramvoússa/NW-Kreta. - Berliner geowiss. Abh., **E 13**: 469 - 481; Berlin.
- KEUPP, H.; BELLAS, S.; RIEDEL, F & WIECHMANN, M. - F. (2000): Miozän-Fossilien aus NW-Kreta II: Die Schneckensande von Koukounaras. - Fossilien, **1/2000**: 17 - 23; Goldschneck-Verlag, Korb.
- KEUPP, H. & BELLAS, S. (2002): Miozän-Fossilien aus NW-Kreta III: Die Beckenfazies. - Fossilien, **1/2002**: 34 - 40; Goldschneck-Verlag, Korb.

A important rule: "Read the fine print!"

Finally a note about the entrainment (export) of fossils from an EU Member State like Greece: Bye-law (EWG) No. 3911/92 from December 1992 about the entrainment of cultural artefacts is effective since the 30th of March 1993. This regulation applies to cultural goods, listed in the annex and is divided into 14 categories and primarily includes archaeological objects: fossils are not specified there. In regards to fossils, they are not listed in the annex and thus do not belong to the directive. Cultural goods not covered by the directive are still covered under the provisions of the EU regulations of national legislation of Member States. The author directly consulted the responsible Ministry in GR to document a legal statement and received the written reply to the legal status of fossils in Greece in March 2004 from the Hellenic Ministry of Culture, Ephorate of Palaeoanthropology-Speleology of S. Greece (Az-No.: 2451). Therefore, be aware: 1.) According to archaeological law 3028 / 2002 all paleontological remnants are considered archaeological monuments/objects, **if the reference to connect to the human existence can be demonstrated** (Art. 2) and 2.) Approval of the Greek Ministry of culture is needed for any species palaeontological-archaeological investigations. (Law-No. 30 28/2002, Art. 36).

Translated by Michael Bloechinger-Daeumling

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At this point 2 Internet addresses (Greek / English) with information's to the topic: www.speleo.gr (l) . www.culture.gr (r.)

