

One of the UVNET stations is located at Thessaloniki, Greece (40.5° N, 23° E) where a YES UVB-1 radiometer operates regularly. Following appropriate methodologies which depend on the type of the instrument and the available spectral information, the erythemal irradiance and the vitamin D weighted irradiance are calculated from these two instruments.

One of the aims of this study is to assess the differences of the CIE-weighted irradiance derived from the available instruments. A five-year (2004-2009) dataset of common measurements with NILU-UV and YES UVB-1 radiometer for the station of Thessaloniki is used to calculate the CIE-weighted irradiance and the uncertainties introduced by the different methods are assessed. In addition, the vitamin D weighted irradiances derived from the YES UVB-1 radiometer with two different methodologies are compared with those retrieved from NILU-UV.

Based on our findings, the risks versus the benefits of the solar UV radiation are discussed for the station of Thessaloniki in Greece.

The Late Miocene floras from Crete; vegetational and palaeoclimatic trends

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On the island of Crete, three Late Miocene outcrops have been discovered so far consisting of significant terrestrial plant macro-remains that have provided a considerable amount of floristic data and constituted the material for a series of palaeobotanical studies in the recent past. The oldest outcrop is located at the southern part of central Crete, near Pitsidia village in the Messara basin, where radiometric data from superjacent layers yielded an age of around 10.5 million years ago, into Early Tortonian. The recovered plant assemblage is still under investigation by the authors and to date its taxonomic composition includes more than 25 different taxa. The second outcrop is located near Makrilia village in the eastern part of the Island in Ierapetra basin. The palaeoflora consists of 62 identified taxa and the age of the sediments is defined by integrated biostratigraphy of dinocysts and nannoplankton as Late Tortonian, approximately 7.7 to 8.6 million years. The youngest plant assemblage originates from different small outcrops exposed near Vrysses village in the homonymous sedimentary basin in the western part of the Island. It includes 19 identified taxa and is assumed to be of Latest Tortonian – Early Messinian age, based on biostratigraphic considerations (ca. 6.0 to 7.5 million years). For the Makrilia outcrop, pollen and spores data exist as well, while a few more palynological reports are available from other contemporaneous sediments from the Island.

As these palaeofloras cover a time span of about 5 million years of the Cretan vegetation history, comparing the floristic data, valuable information about the possible changes in floristic composition, the vegetation succession and the evolution of climatic conditions during this period of the ancient Cretan region can be revealed. However, the interpretation of the plant assemblages and the extraction of definite conclusions are rather risky due to the inadequate number of floras, their particularly different depositional environment and undoubtedly the taphonomical bias.

The discovered plant macro-remains comprise mainly of foliage (impressions, seldom carbonized compressions) and less frequently of fruits, seeds, shoots, flowers and inflorescences. The preservation quality varies significantly from bad to almost excellent but generally is characterized as fairly fine.

Floristically, the three palaeofloras share only a few common species, like *Quercus mediterranea* Unger, *Acer pseudomessulanum* Unger, *Buxus pliocenica* Saporta et Marion and *Daphnogene polymorpha* (A. Braun) Ettingshausen. However, the assemblages from Makrilia and Pitsidia are obviously closer, as they share many taxa like the wetland plants *Myrica lignitum* (Unger) Saporta, *Taxodium* Rich., *Equisetum* L., *Populus* L., *Salix* L. and some, more or less, mesic arboreal elements including *Fagus* type *attenuata*, *Quercus*

kubinyii (Kovats ex Ettingshausen) Czezcott, *Podocarpium podocarpum* (A. Braun) Herendeen. Contrary to Pitsidia, the Makrilia flora illustrates a remarkable higher diversity. Especially, the mixed mesophytic forests comprise a great number of various deciduous accessory elements like *Zelkova zelkovaefolia* (Unger) Kotlaba, *Ulmus* L., *Carpinus* L., *Fraxinus* L. and *Tilia* L. Likewise, the families Lauraceae and Magnoliaceae are well diversified in Makrilia flora, accompanied by other thermophilic taxa like *Engelhardieae*, *Tetraclinis salicornioides* (Unger) Kvacek and *Asterocalyx styriacus* Ettingshausen. At the same time, in Makrilia the sclerophyllous woody plants are more frequent and diverse.

Conversely, the flora of Vrysses demonstrates a more sub-humid character with many xeromorphic elements that indicate the occurrence of well-developed sclerophyllous plant associations. The mesophytic woodland palaeocoenoses are clearly less diverse and probably poorly developed. Tall deciduous trees like beech and oaks are apparently lacking. Instead, only a few deciduous shrubs like “*Parrotia*” *pristina* (Ettingshausen) Stur and *Ziziphus ziziphoides* (Unger) Weyland seldomly occur. Typical swampy plants are completely absent here.

Climatically, the examined plant assemblages demonstrate a warm temperate character for the Late Miocene of Crete. Without any doubt, all of them include a prominent proportion of sclerophyllous woody plants which increases gradually from the Early Tortonian to the Messinian and these elements eventually established a very strong representation at the Messinian stage. This fact probably indicates a gradual transition to drier conditions and an increased seasonality of precipitation during the Late Miocene in the Cretan area. This conclusion is strongly supported as well by all the related palynological records from the island.

European Geopark Network and Geotourism

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Established in 2000, the European Geoparks Network (EGN) aims to protect geodiversity, to promote geological heritage to the general public, as well as to support sustainable economic development of geopark territories, primarily through the development of geological tourism.

The network has drawn together territories from across Europe that share these aims and now work together in an active and dynamic way in order to achieve them. Originally consisting of four territories, the network has been expanded to include, as of May 2010, 37 territories across 15 European countries.

In 2001 the European Geoparks Network signed a formal agreement with the UNESCO Division of Earth Sciences, whereby UNESCO gave the network its endorsement.

A further agreement was signed with UNESCO in 2004 whereby the EGN was given the responsibility for regulating membership of European Geoparks in the UNESCO Global Geoparks Network. As a result the EGN acts as the European sector of GGN.

The structure of the European Geoparks Network is relatively simple and comprises an Advisory Committee (11 members including representatives of UNESCO, IUGS and IUCN) and a Coordination Committee (comprising of two representatives from each member). Decisions concerning the network are only taken by the Coordination Committee. As part of the Coordination Committee, there is an elected EGN Coordinator and Vice Coordinator to represent the whole Network. They coordinate contacts with other international bodies (E.U., UNESCO, IUGS, IUCN, Council of Europe etc.) and prepare the agenda of the meetings in cooperation with the meeting hosts.

The European Geoparks Network adopted a common logo which is registered in all European countries. An EGN member has the right to use the European Geopark logo in its communications thereby contributing over time to creating a common image of quality, linking the enhancement of European Earth heritage with sustainable development.