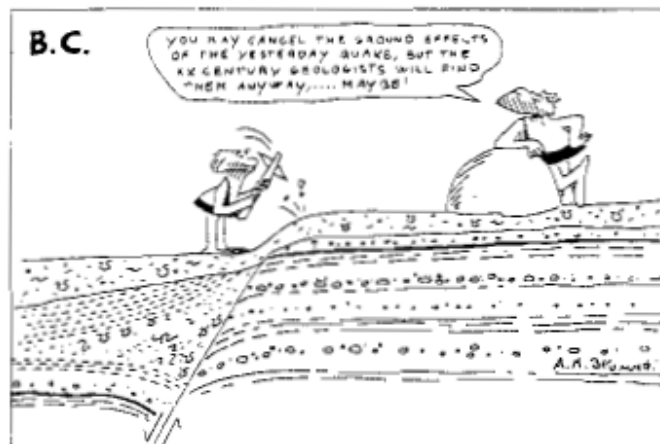


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SECOND WORKSHOP ON PALEOSEISMOLOGY



MARIOLAKOS, I., FOUNTOULIS, I., NASSOPOULOU, S. (1992). - Abrupt disturbance of the continuity of deposition caused by paleo-earthquakes. *II International Workshop on Paleoseismology, June 1992, Rome*, Abstracts p. 42.

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ABRUPT DISTURBANCE OF THE CONTINUITY OF DEPOSITION CAUSED BY PALEOEARTHQUAKES

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Earthquake as a geological phenomenon may cause natural hazards, as well as disturbances of the continuity of the geological processes.

In this paper, we are going to present evidence of some paleoearthquakes occurred since Oligocene (≈ 40 Ma) up to now, mainly –Peloponnesus Greece).

1. At the boundaries between Arcadia and Argolis provinces (Gyros area, NE Peloponnesus) turbiditic layers (Oligocene) of flysch formation are lying directly and unconformably on the paleorelief formed on fractured neritic Cretaceous carbonates of the Tripolis geotectonic unit. The occurrence of a deep sea formation (flysch turbidites) lying directly on an already faulted neritic one (carbonates), in connection to the stratigraphic hiatus (Oligocene/upper Cretaceous), leads us to the conclusion that many strong paleoseismic events interrupted the paleogeographic evolution and caused a gradual, but most likely, not continuous, subsidence of this already formed paleorelief at a depth more than 200 m below sea level.
2. At the central part of Kato Messinia neotectonic graben, on a section of a sand quarry, synsedimentary faults, with small throws, crossing the lower part of the early Pleistocene marine deposits, as well as slidings and synsedimentary structures, indicate a very active depositional environment related to paleoearthquakes.
3. At the eastern margin of the above mentioned neotectonic graben (Ano Amphibia village), alternations of shallow water marine sediments (presence of corals) of early Pleistocene, with terrestrial ones occur. This fact should be related to paleoseismic events causing at least two different phases of local subsidence, during the last stage of the regional subsidence phase.
4. At several archaeological sites of Greece (i.e., Delfi, Mystras, etc.) successive rockfall events during the historical period occurred, related to certain seismic events, although the precise dating of these events is difficult for the time being.

From the above mentioned, it is evident that in the area of the Hellenic Arc the seismic activity started at least during the Oligocene and it continues up to present days.

In order to understand and predict the future seismic behaviour of an area, we have to study not only the seismic activity during the historical time, but also the older one, related to the deformation type of the area.