8-10. - NEOTECTONICS AND RECENT CRUSTAL MOVEMENTS IN ISRAEL

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Crustal movements are actively taking place in Israel. This was detected by geodetic means: A series of repeated precise levellings was taken, and a change in elevations was found to have taken place between 1958 and 1968/9. Differences in elevation between adjacent points ranged up to a few tens of mm, and cumulative displacement in relation to fixed starting points ranged between +50 to -60 mm.

The influence of both systematic (e.g. instrumental) and random (e.g. climatic) errors cannot account for the changes found, and these are therefore assumed to be true evidence for tectonic activity.

The interesting feature about these movements is their inverse relationship to the morphotectonic pattern: areas that are structurally and topographically high, had subsided in relation to low areas, whith the latter often have risen.

Other assembled evidence also indicates active crustal movement, continual since Pleistocene times or earlier.

Geological: Quaternary sediments in the Jordan Rift Valley (the lacustrine Lisan and'Ubeidiye formations, and others) are displaced and folded. Tilting and faulting of marine beds was reported from the northern Coastal Plain: Tyrrhenian sediments with Marginopora are found on adjacent blocks at several meters above to -100 m below MSL respectively. Differences in thickness and lacunas were also observed, indicating the same phenomena.

Archeological: Many man-made structures, from all historical periods, show signs of violent collapse, instead of piecemeal demolition. Walls and pillars fall in one direction only. Such destruction indicates earthquake effects rather than human destruction.

Historical: The historical record of earthquakes shows that earth tremors have been recurrent at all historical times. This indicates the stressproducing forces are continuously at work.

Geomorphological: Numerous cases are known of recent shifts is drainage patterns, including stream capturing and asymmetries of drainage basins clearly indicating changes of structure.

Seismic: The history of seismic records in Israel is short, but indicates a clustering of epicenters close to the Rift Valley.

It is intended to continue this study by measuring microseisms, and possibly strain displacements, at or near such areas of activity, especially where repeated levellings have indicated vertical movement. By covering selected areas with a dense net of measurements, the horizontal component if the movements may also be determined. This will provide valuable data for the much-disputed tectonics of the Jordan Rift Valley and the adjacent regions.

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Quel est l'importance maximum de ces mouvements verticaux, par année.

Réponse : Entre quelques millimètres et quelques dizièmes de millimètres.