Continued tectonic activity is also indicated by the frequency, magnitude, and epicentres of earthquakes. The strongest and most frequent earthquakes have been registered along the Indus shear zone (Chaman Fault) repeatedly affecting northern Afghanistan. On the other hand southwestern Afghanistan is a region almost free of earthquakes, from which neither earthquake damage is known with certainty nor to be expected [1]. Nevertheless the *Ta'rīkh–i Sīstān* records natural catastrophes, including earthquakes, in the middle of the 9th century [2].

From a geomorphological point of view the Hilmand Basin may be considered as the eastern continuation of the Iranian Plateau (Lūṭ fault block), and like the latter it is a solid mass framed by mountain chains. Based on an aeromagnetic survey [3] the Precambrian basement is supposed to be at a depth of 3000 to 5000 m. These crystalline rocks form the base of the so–called Sīstān fault block, which has been subsiding at least since Mesozoic times. Above a yet unknown Palaeozoic section some 1000 m. of Mesozoic and Cenozoic rock respectively are probably accumulated. The Tertiary sequences of the eastern Iranian Mālik–i Siāh Mountains are highly folded, whereas Cenozoic sediments exposed in Sīstān are still flat lying. A vertical jointing, however, which is related to directed tensional forces (fig. 10), is well developed. This joint pattern encourages the development of vertical cliffs and, furthermore, determines the drainage system of the gently inclined wash slopes. Thus both the joint and drainage pattern reflect the regional strain, which has affected the substratum of Sīstān. From the maxima of measured joint directions the relative dimension of the effective couple and its resultant can be established. This may be demonstrated by contours of equal strain and arrows indicating the direction of resultant strain (fig. 10). Corresponding with the regional structure (fig. 9) the zone of major tension follows a NE–SW line, which is demarcated by the Khāsh Rūd. This may indicate a lateral compression of the area between the Hindu Kush and the Makrān Mountains. It reveals that the regional position of the terminal lake playa is predeterminated structurally, which is also indicated by the gradient of the uppermost wash slope (fig. 8). But it should be emphasized that no displacements along faults were observed in outcrops of Cenozoic rocks and that only gentle warping can be recognized from the structural analysis.

5.2. *Mesozoic Substratum*

The mountain chains that border the Hilmand Basin mainly consist of marine Upper Cretaceous rocks. In the southwestern extension of the Hindu Kush virgation isolated Cretaceous inliers penetrate the Cenozoic sedimentary cover. From this it can be deduced that Cretaceous limestones are widely distributed in the subsurface of Sīstān.

The facies composition of the Cretaceous, which corresponds with that exposed near

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[1] L. E. Heuckroth, R. A. Karim, *Earthquake History, Seismicity and Tectonics of the Regions of Afghanistan*, Kabul, 1970.

[2] Bosworth, *op. cit.*, p. 105.

[3] A. Schreiber *et alii*, « Geology and Petroleum Potentials of Central and South Afghanistan », *Bulletin of the American Association of Petroleum Geologists*, 56, 1972, pp. 1494–519.