

of Askhabad. In both these regions there were well-marked series of terraces, indicating a succession of decreasingly severe impulses toward valley deepening. Whether the cause of these terraces was to be found in crustal movements or in changes of climate could not be determined because of the small number of examples, either cause seeming to be competent to explain all the phenomena. Farther east along the northern slope of Kopet Dagh the same state of affairs continues indefinitely. At Anau, 6 miles east of Askhabad, a small stream breaks through a gorge in the front range of Kopet Dagh and debouches upon the piedmont plain, where its waters are diverted for irrigation. In its upper course the Anau stream flows northwestward through a broad valley of soft strata, which were depressed to their present level by the fault which uplifted the small Anau ridge on the northeast side of the valley. This Anau ridge appears to be a fault block of the same sort as that of Suru-Muzdar, which lies on the southwestern side of the valley and has been described by Professor Davis. In both of these parallel blocks the southwest side presents a precipitous escarpment, the battered successor of the original fault scarp, while the northeastern face presents a smoothly-graded slope in which are incised the deep trenches of small consequent streams. In the Suru-Muzdar

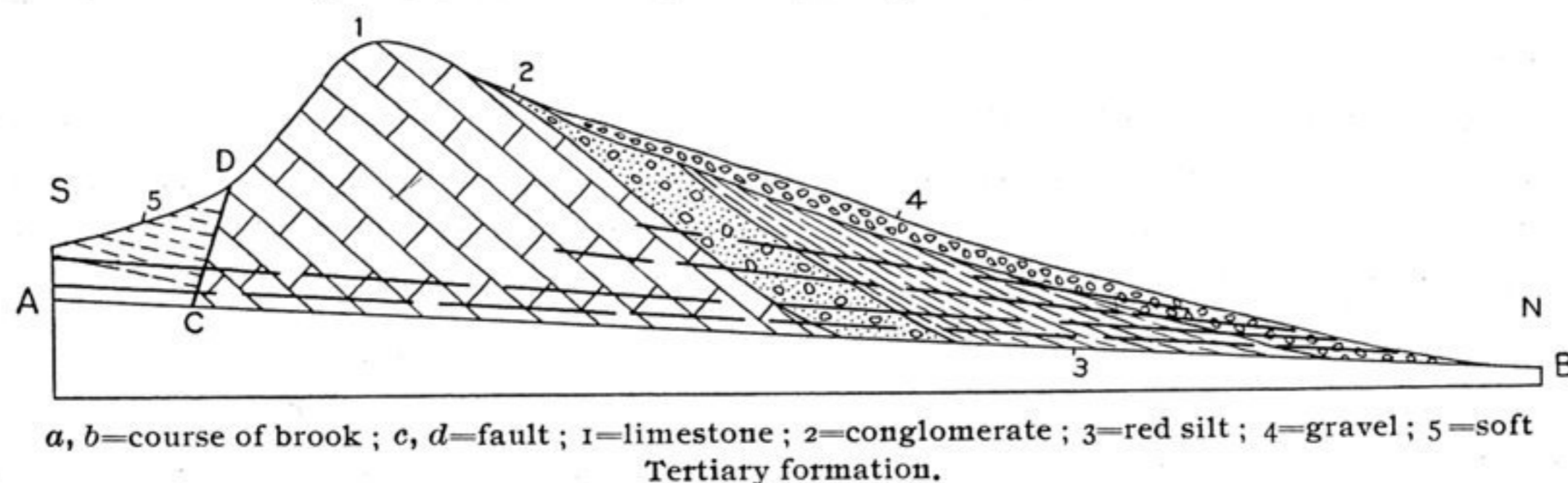


Fig. 156.—North and south section along the Anau Brook, across the Anau fault block. Dash lines indicate terraces.

block, so far as could be judged from a distance, the back slope appears to be wholly structural, following the bedding of the hard Cretaceous limestone. In the Anau block, on the other hand, the upper part of the back slope is determined by the structure of the limestone, while the lower part is quite independent of structure and truncates the underlying warped Tertiary strata (fig. 156). Where the Anau stream turns to the north and passes out of the trough between the two fault blocks it has cut a deep gorge in the Anau block. The sides of this gorge are steep, but even at the narrowest point the bottom is flat-floored and has a width of several hundred feet, so that although the gorge is young there must nevertheless have been a considerable lapse of time since its cutting was begun, and even since it was cut to its present level and the work of broadening the bottom began.

The Anau gorge is important because of the terraces which it contains. As is seen in the cross-section (fig. 156) the stream, on leaving the soft strata south of the Anau fault block, first traverses a hard limestone forming the narrowest portion of the gorge, and then a coarse conglomerate, and lastly a red silt already described as like the silts of Kashgar and Bajistan. Overlying the conglomerate and silt, both of which have been warped and dip northward, extends a recent conglomerate or,