

below from deposition and leaving it somewhat depressed. These are a few of the topographical variations wrought in time by human occupation of an aggrading delta.

THE ANCIENT AND THE MODERN DUNES OF KARA KUM AND INTERBEDDING OF THE DELTA MARGINS WITH THEM.

Riding north from Anau, one passes from bare clay on to gently rolling sand-hills, ancient dunes that have long since lost their barkhan shape and now appear to be of great antiquity. For a few days in spring these are green with grass, soon withered brown by the arid sun. So old are these now fossil dunes that their firm, cross-bedded sand stands wind-carved in vertical and overhanging bluffs, while all around are seen resistant holes deep-burrowed by desert turtles, lizards, and hyenas. Over them lie fresh barkhans of sand, now drifting from the ever-shifting waves of Kara Kum beyond. One might expect to meet with naught but dunes in such a wind-built desert land, but far out among them lie small areas of smooth

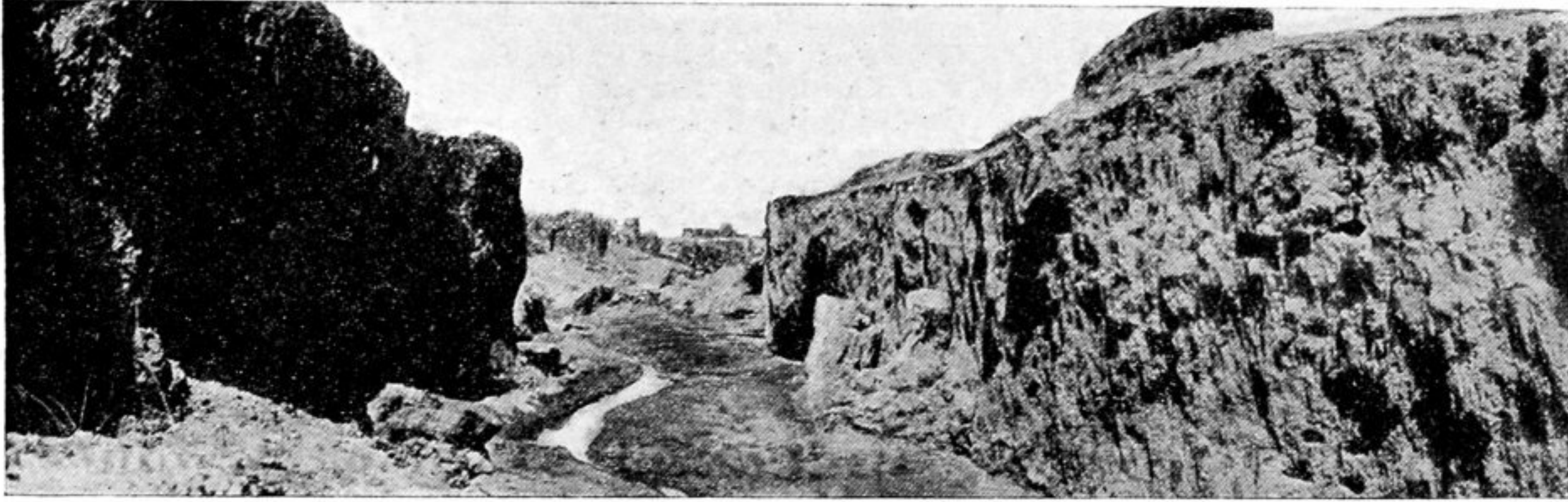


Fig. 487.—A Canal Gully in the Abandoned Irrigation Terraces of Anau.

flat clay, still bare—portions of the delta isolated from the rest at different times long past. And as they vary greatly in relation to each other, to the mother delta and to the dunes, these areas of bare clay become of interest. In some instances two plains separated by only a narrow ridge of dunes differ several feet in level. Thus we have preserved in open air the ancient delta surface, various horizons of antiquity escaped from burial.

How old these more ancient dunes around Anau are may be conjectured from a section exposed by our shaft sunk through the ruins of the sand-buried oasis near Ball Kuwi (see plate 69). There culture rests on hard, extremely fine, laminated clay, light brown, the contact being practically on a level with the takir plain just north and doubtless a continuation of its horizon. This clay bed is 4.5 feet thick and rests on 1 foot of dune-sand, below which lies another sheet of clay 0.5 foot thick. From there down our shaft continued in dune-sand, cross-bedded on a large scale and so loose that it was unsafe to go deeper, and how far it is to the next clay layer we know not, but imagine that for great depth the structure would be large masses of dune-sand interbedded with clay. What we did suffice to show that here was an area where an aggrading delta surface was from time to