

decrease in vegetation indicated by the absence of the loess constituent, and the evidence, both geographical and archeological, of regional desiccation, the change would seem clearly to have been towards aridity. The successive degradations and rebuildings recorded in our shafts show that this period was one of fluctuating climate—a time in which the periods of greater precipitation affected the mountain regions without causing local rainfall after winter on the zone of deposition.

The time needed for the accumulation of the observed 2,200 feet of sediments in the Askhabad Well can be estimated only in geological chronology. It doubtless extends well back in the Pleistocene period, and it is not unlikely that the conditions shown between the depths of 500 and 900 feet mark the last great glacial advance.

Looking upon the loess-forming condition shown below—60 feet as typical of the piedmont plains of southern Turkestan generally, and probably of northern Persia as well, we see correspondence with the conditions that permitted the existence of the herds of ruminants and horses that in Pleistocene time ranged from Mongolia to southeastern Europe. And that these animals existed in a wild state at Anau at the time when the North Kurgan was settled is proved by Dr. Duerst's study of the bones collected during our excavations.

In the following table, constructed by R. W. Pumpelly, an attempt is made to illustrate the physiographic history of the Anau delta-oasis:

Physiographic History of the Anau Delta-oasis.

TIME.			PHYSIOGRAPHY.				ARCHEOLOGY.		
			MOUNTAINS.		DISLOCATION ZONE, BORDER OF PLAINS.			PLAINS.	
Preglacial.			Quiet.	Old.	Quiet.				
Quaternary glacial period differentially recorded, with local epochs in mountain valleys according to uplift.				Young. Rapid dissection to deep valleys.		Tilting border, buried in general rapid aggradation.		Aggrading rapidly with grass steppes over large areas, stationary sandhills, and loess.	Evolution of Quaternary life over the steppes of Asia. Primitive Man.
Postglacial.	Extreme recession.	Reaction to extra dry climate.	Slow rising, differentially, in blocks.	Slow dissection.	Active dislocation.	Rising of tilting border to form a dry piedmont transversely dissected by valleys.	Slow sinking as a whole.	Aggradation slow Desert steppes. Moving sand.	
		Partial recovery of precipitation.		Less slow dissection.		Valley fills to -28 feet and continues filling to -20 feet		Grass.	Æneolithic Man founds North Kurgan.
	Dry.	Slow dissection.		Valley reexcavated to below -35 feet.		Desert.		Culture-gap.	
	Recovery.	Less slow dissection.		Valley filled again to -12 feet.		Grass.		Foundation and growth of South Kurgan. Copper.	
	Dry.	Slow dissection.		Valley reexcavated.		Desert.			
	Recovery.	Less slow dissection.		Valley fills to -15 feet and then overflows with irrigation.		Grass.		Iron	
	Dry.					Desert.		Anau.	