

the extremes of a grand cyclical evolution worked by solar energy under the direction of gravity, a geologic drama enacted by mountains and storms round the plains whereto the mountains crumble. Picture its massive ranges slowly wearing away into their rivers and the steady building of the plains till naught but the low relief of a gently rolling surface, half-buried in its own piedmonts remains of their once colossal heights. The shores of its wide interior sea are after this not so desolate but that sufficient rain falls to nourish grass over the surrounding steppes, rain from the moisture that would have been combed out by the mountains when they were higher. It is a basin worn to low relief and, therefore, receives a precipitation more evenly distributed over space and time. But though this does mean that some of the water which formerly found its way into the rivers and sea must suffer direct reevaporation on the steppes, and thus expand the loess zone, we must believe that so much more will find its way from the oceans to the basin that its rivers and sea would swell to relatively high shores.

This brings us to a critical point, the end of the first cycle—a point of minimum relief, when so many thousands of feet have been unloaded from the mountains and loaded onto the plains that the ultimate strength of the already warping earth's crust is reached, and the shearing stresses set up along the borders of the plains result in far-reaching faults. Then begins the second cycle with a long period, during which the plains sink slowly and the mountains rise by displacement. We can watch the gently graded hydrographic systems thus uplifted changed into torrential streams deep canyoning the rising peneplain and gently rolling slopes of worn-down mountain cores, while on the higher masses the acceleration of glacial conditions is reexpanding remnant ice-domes and even giving birth to advancing valley glaciers. This process continues till the crust has almost reached an equilibrium and regains its old rigidity.

The first cycle is completed; and we have returned to a relatively greater concentration of precipitation on the mountains and intense aridity of the plains. Less moisture finds its way from the oceans to the basins and a shrinkage of rivers and sea has lowered their shores. Once more there is a desolate expanse of flying sands and relatively little grass and loess on the steppes. Our second cycle now is drawing to a close; a rapid carving of the mountains into deep canyons soon widened into immense gorges floored with broad flood-plains develops into the graded conditions during the crustal rest in the end of the second cycle.

The continued shifting of load thus brought about ultimately results in a second yield more or less near the old lines of weakness, and a third cycle is ushered in as the plains go down and the mountains rise again. New canyons thus incised in the old valley-floors have cut down, leaving a terrace above. The mountains are perhaps higher, but sharper in relief, and the interior sea has shrunk. Continued cycles result in manifoldly terraced valleys and a series of abandoned shores or terraces along the coasts of our interior sea, and an interlapping of the deposition zones.

The actual course of Central Asia's development has been more complex than that of ideally simple basins. The Eastern or Tarim basin is, to be sure,