

In studying the great map compiled by Klaproth from caravan itineraries and other sources, I was puzzled by the great number of lakes dotted over the plains between the Aral Sea and the Siberian steppes—bodies of water without outlets and with no inlets of appreciable size. Their continued existence in an arid region seemed inexplicable. And when later I crossed Mongolia, the poverty of the pasturage—barely supporting the present very sparse population of Mongols, even on Tamtchin-tala, the very cradle of Genghis Khan and his hordes—seemed evidence of a marked change in natural conditions since the times when these same plains poured forth the successive waves of humanity that first threatened China, and ultimately conquered that country and devastated the Eurasian continent.

I passed the winter of 1864-65 in Irkutsk, where I learned from Russian officers, who had campaigned on the plains north of the Aral Sea, that the countless lakes still existed, but that they were continually and slowly shrinking in size. Some of them on the Siberian borderland, which had been lakes in the eighteenth century, had actually dried up and were now the sites of towns.

It occurred to me that if the vision were reversed, one looking back through time would see the lakes gradually enlarging and coalescing till in some remote century they might appear as a large inland sea. There seemed to me to exist a relation between the buried cities of the Tarim basin, the diminished pasturage and population of Mongolia, the vanished Han-hai (dried sea) of the Gobi, the shrinking of the lakes of the Aralo-Caspian undrained depressed area, and the overwhelming movements of barbarian hordes toward China and Europe.

The subject had the fascination of a mirage, in which dissolving glimpses of a vanishing world mirrored the parallel progress of nature and man toward desolation within and destruction without. A great inland sea shrinking to disappearance presupposed former conditions favorable to its creation and to the maintenance, on its border, of a vegetation and population incompatible with the present aridity. What might have been the origin of such a sea and how far back in the perspective of geological time, and what the cause of the apparently progressive change?

Agassiz's beautiful theory of a polar ice-cap in the glacial period had already been established, and it seemed possible that climatic influences that could produce such continental accumulations of ice might also have caused the Caspian and the Aral to coalesce and expand to form a large inland sea, and that with the passing away of the climate of the glacial period there would necessarily begin the shrinkage of the sea and the progressive desiccation of Central Asia. And in this fateful progress should we see a resulting struggle for life lasting fifteen centuries, from the third cen-