

Although we do not find in the history of Shor Kul a complete series of records to match all the changes of climate inferred from the study of the old moraines, we find no records inconsistent with such changes and many confirmatory of them. The essential features of our glacial theory are that a number of cold or glacial epochs were separated by warmer interglacial epochs, when the climate was approximately like that of to-day, and that these epochs decreased in severity and length from first to last. The retreat of the lake between the two epochs of unequal expansion supports this most clearly. Further study will probably show that the past oscillations of the lake agree even more perfectly with those of the glaciers. At present only a tentative correlation of lacustrine and glacial epochs is possible. The silts of the upper lake level may represent either or both of the first two glacial epochs; the cutting of the deepest valley in them represents the succeeding warmer interglacial epoch; the third and fourth epochs, glacial and interglacial, are perhaps represented by the gravel filling and the terraces, respectively, which lie in the deep valley. The fifth glacial epoch seems to correspond to the rise of the lake to the 100-foot level, and the present retreat of the ice to the present retreat of the water.

SUMMARY.

In our review of the history of Central Turkestan, from Paleozoic times down to the present, we have found that the greater changes have on the whole affected the entire country rather than small areas. Uniformity has been the rule. During the Paleozoic era the entire region was submerged beneath the sea and the deposition of calcareous strata was long-continued. After the latter had attained a great thickness tectonic movements began on a large scale and continued until the limestones had been closely folded and mountains had been formed, which were worn away during the first part of the succeeding era. The Mesozoic and Tertiary eras are not sharply separated and must be considered together. Throughout the greater part of these eras terrestrial conditions prevailed, with the deposition of strata characteristic of interior basins, namely, conglomerates, cross-bedded sandstones, and silts, which appear to be vast playa deposits. Most of the strata are without fossils, and in this and other ways suggest that the climate was dry and that desert conditions prevailed more or less extensively. Only once during this long period did the sea encroach on the land. This was at the end of the Mesozoic era, when limestones and marls were laid down in what seems to have been a sea of somewhat fluctuating depth. It is not impossible that between the Mesozoic and Tertiary eras there were world-wide movements which elsewhere caused uplift and erosion, followed by unconformable deposition; but here the movements of this time caused encroachment of the sea and deposition. In the basin region of America the Mesozoic and Tertiary eras present a succession of strata notably similar to those of Central Asia. The resemblance is so marked and extends so far into details that it can scarcely be the result of chance. It suggests that interior arid basins which to-day resemble one another have long resembled one another and have passed through a similar succession of changes.