

the snow-line. I have counted over a hundred in sight at once, ten of them big old rams standing apart, and the rest all ewes and younger ones. Save for the Kirghiz hunters who appear at rare intervals to stalk them with medieval fuse-guns, they live unmolested.

Nowhere is there a more desolate land. It is a desert of unexpected forms, time-crumbled mountains and wind-worn cliffs, strange hollow and pitted boulders, and sand-polished stones, efflorescent salt-plains and drifting dunes, with here and there the scattered remnants of an old bleached skeleton with sun-cracked horns. Limestone boulders dropped on the plain by floating ice, when the lake stood higher and glaciers came far down, have cracked in the sun and crumbled to conical piles, while whole mountains of the same rock stand shrouded in their own remains. Perhaps the most remarkable example of desert disintegration is found in the granite mountains ranging on the east. There whole mountains are fast crumbling to arkose and sand from which some few honeycombed slabs project as remnant wind-worn ridges. Such are the features wrought by an arid sun and shade, with a range of 80° F. from day to night; the records of diurnal change revolving through long time.



Fig. 433.—Sand and Arkose Residuum of Deflation (Kara Kul).

And what has become of all the fine stuff, the dust inevitably given off in such a colossal crumbling of the land? It is nearly absent from the surface, as, indeed, it could not long remain on barren, wind-swept ground. The few inches of loess found here and there below the ice and in tiny patches of grass along its streams can not account for the dust of ages. It must be somewhere, and, if not here, we must conclude that it was ever blown away by the storms that come and go, blown away to settle in the grass of other, less arid, regions.

Around the lake we find evidence of its former wide expansions in beaches, respectively 60, 120, and 200 feet above the present surface, and apparently one at 320 feet nearly obliterated. The lower ones are comparatively fresh and indicate but short existence at their levels. These expansions seem to correspond in relative magnitude and antiquity to the moraines that now lie in front of various surrounding valleys, and which are clearly divided into at least three glacial epochs, and a fourth much more recent advance.