

In the afternoon of July 16 we went 8 or 10 miles southwest of the head of the Ula-khol gorge, following the main stream west and south into the mountains, and hoping to reach the valleys beneath the highest peak that we had seen from the lake shore; but it proved that we were not far enough west; and that bane of reconnaissance work, the lack of time, prevented our going farther. We found, however, at the mouth of a branch valley from the southeast a large, rounded morainic mass, similar in form and apparent age to those we had seen in the Tuluk Valley. A younger moraine was seen farther up the glaciated trough, in whose steep southern wall two hanging cirques opened. A terrace occurs in the main valley in association with the larger moraine. It was continued upstream as far as we could see, and there it was a hundred or more feet above the stream. It was distinctly traceable for half a mile down the valley, though with rapidly diminishing height in that direction; farther down it was preserved only in small remnants, and no signs of it were found in the longitudinal valley. Aggradation of the terrace seems to have been contemporaneous with the growth of the moraine, and the trenching and removal of the terrace with the weathering and rounding of the moraine. The moraine is thus doubly shown to be of considerable antiquity. This is confirmed by finding that the terrace floor has been aggraded by wash from the mountain sides, so that it now has a distinct slope toward the valley axis, instead of only a slope down the valley, as is habitual with young terraces. Two other old-looking moraines were seen; one of them up the valley to the southwest, the other up a branch valley to the east.

MORAINES IN THE KUNGEI ALA-TAU.

As the Kungei Ala-tau rises eastward along the north side of Issik Kul, the even crest line with which it begins is more and more dissected. Before the middle of the lake is reached the range has gained sharp Alpine forms. A glacier was seen high up among the summits, from near Tur-aigir station; and a few miles north of Choktal station there seemed to be a moraine lying somewhat forward from the mouth of a valley, on the upper part of the piedmont slope, about 1,500 feet over the lake, or at an altitude of 6,700 feet. Further reference will be made to this moraine in connection with Lake Issik Kul. Severtzof mentions what he takes to be a moraine lying on "lake beds" on the south side of Issik Kul (1875, 32).

The ascent from the Russian village of Sazanovka, near the lake shore, northward toward Sutto-bulak pass, in our unsuccessful attempt to cross it, carried us past what seemed to be an old, dissected moraine on the east side of the Ok-su Valley, at an altitude of 7,000 feet. Farther up a branch valley we came to a well-defined moraine whose lower end stands at about 9,000 feet, and whose western lateral ridge is 200 or 300 feet high. It is rather sharply trenched by the valley stream. The glacier that made this moraine must have been at least 3 miles long. We followed the valley nearly to its head in our effort to cross the pass, seeing a number of cirques on either side, inclosed by sharpened arêtes (fig. 52). A small glacier occupied the head of the valley for half a mile or more at a height of about