

the valley floor is choked with waste from the moraine and the underlying rock. The difference in age between this gorge and that associated with the fourth

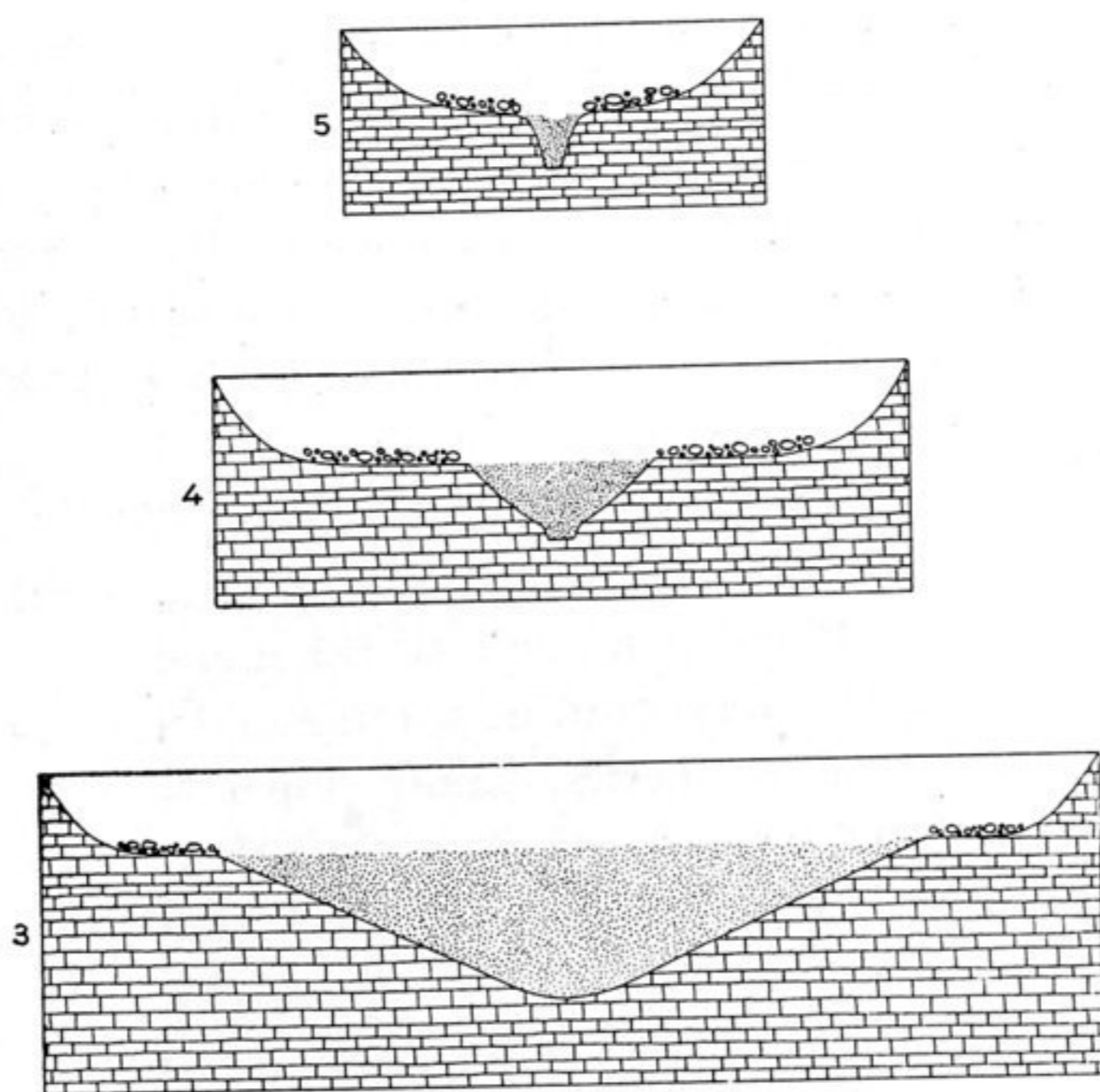


Fig. 134.—Cross-sections of the Khoja Ishken Valley, to show the shape and relative size of the three gorges. Drawn from observation, without measurement. The circles indicate moraines. The lightly shaded portions indicate the amount of erosion since the respective parts of the valley were filled with ice.

to what happened during the intervals between their deposition or as to whether there were any intervals when glacial deposition ceased. The glacier of this valley is the largest of all those of which the moraines were studied; it reaches a maximum length of nearly 50 miles. The thickness of the ice was so great that at Jubergenti pass it overflowed toward the north into the valley of the Kara Kul River. It was not possible to follow the Mudirum River to its head, but a side valley was examined as far up as a modern moraine. The relations of the moraines are illustrated in the accompanying sketch map (fig. 136). At the head of the valley are two tiny glaciers, A and B, with little moraines, marked VI. Below these is another moraine, V, which seems to be a little older, but may be merely a stage of VI. In the next valley to the west is a cirque with a very young moraine, V', but no glacier. There is much snow near by, and these little moraines were not well seen. The next moraine, IV, is 500 or 600 feet lower, and is a large semicircular mass of clearly glacial origin. It is composed of limestone

*The Kirghiz call most of this stream the Ak Sai or White River, and apply the name Mudirum to the lower part only, but the name Ak Sai is almost as common as Kuzzil Su, and as this Ak Sai empties into another Ak Sai, it seems better to use the less common name.

moraine appears greater than between the gorges of the fourth and fifth moraines. This means that between the formation of successive moraines there must have been considerable intervals of erosion. Where the glacier stood during these intervals is not clear. It may have retreated above the position of the next moraine and again advanced; or it may merely have retreated to that position and there remained stationary.

(3) *Moraines of the Mudirum Basin.*—A third valley, of broadly open basin form, drained by the Mudirum Su* on the south side of the Tian Shan plateau, shows old moraines of four and probably of five ages lying in regular sequence, without any indication as

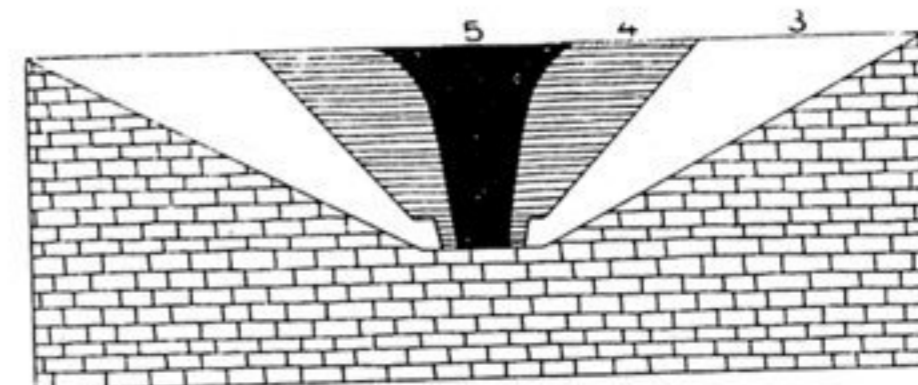


Fig. 135.—Cross-sections of the three gorges of the Khoja Ishken Valley, to show the amount of widening and erosion of the valley in each case relative to the power of the stream and of erosion without reference to the actual size.

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