so small in diameter as to give them the proportions of a pencil set on end. There one can see these pinnacles in all stages of formation, narrow high ridges being the next to last. These have been worn down in such a manner as to make flutings and channels in the ridges, owing, possibly, to planes of fracture. A further accentuation of the channels finally pierces the ridge entirely, and it dissolves into a row of pinnacles, indicating where a ridge formerly existed. These pinnacles are further remarkable on account of their low altitude (8000 feet), showing that extensive glaciation has not existed since they were formed or nearly formed.

Quaternary.—There are no deposits of any age between the Middle Cambrian and the quaternary. The action during this age has, however, had much to do in determining the features and topography of the region. The cliffs at the base of the valleys always exhibit the action of ice to a greater degree, while those near the summits, unless near existing glaciers, show a preponderant aërial action. There is no clearly defined line of demarcation between them, and the evidence of one form of action or the other vary locally to a considerable degree. An average altitude of about 9000 feet seems to be the upper limit of any previous general glacial action. We may therefore imagine the maximum glaciation of the Quaternary to have, for the greater part, submerged these valleys and mountains with a field of ice, above which the higher mountains appeared as islands. We may also presume that the flow of the ice had, in the short valleys and in the longer Bow valley, the same general direction as the existing surface drainage. Standing on the summit of Goat mountain and looking across the Louise valley to the west, this faint line of highest glaciation can be discerned on the mountains, with a downward slope corresponding somewhat to the slope of the valley bottom. This might be deceptive but for the fact that the slight upward tilting of the strata as they run northward is cut across by the slight downward slope of the former glacial level. The altitude of the ice-level at the head of the valley was approximately 9000 feet, and probably 8000 feet at the "gap," or entrance.

Glacial Striæ.—These were observed in surprisingly few places, though constant attention was paid to their discovery. In Paradise valley, the bed rock one mile north of the present glacier is well scored and striated in and near a stream channel. This instance was, however, below the level of present glaciation. The only other striations observed in the quartzite were in the Louise valley, on the very summit of a small mountain called the Beehive, 7352 feet in altitude. Long, coarse, but shallow striations are formed here, some of which were quite faint, and only distinguished from the rest of the surface rock by lines of dark lichens growing in them. The direction of these striæ was parallel to the general direction of the valley, and shows that the ice which made these scorings was not merely local, but part of a great current setting