

gigantic and perfect a piece of ice-work as the second cañon was in store for us. From a narrow gorge, the sides of which rise to heights of 1000 feet or more, the river darts out into the plain which we had been traversing. The rocky sides of this ravine are smoothly polished and striated from the bottom up apparently to the top. Some of the detached knobs of schist rising out of the plain at the mouth of the cañon were as fresh in their ice-polish as if the glacier had only recently retired from them. The scene reminded me more of the valley of the Aar above the Grimsel than of any other European glacier-ground. As we rode up the gorge with here and there just room to pass between the rushing river and the rocky declivity, we could trace the ice-worn bosses of schist far up the heights till they lost themselves among the pines. The frosts of winter are slowly effacing the surfaces sculptured by the vanished glacier. Huge angular blocks are from time to time detached from the crags and join the piles of detritus at the bottom. But where the ice-polished surfaces are not much traversed with joints they have a marvellous power of endurance. Hence they may have utterly disappeared from one part of a rock-face and remain perfectly preserved on another adjoining part. There could be no doubt now that the Yellowstone glacier was massive enough to fill up the second cañon to the brim, that is to say, it must have been there at least 800 or 1000 feet thick. But in the course of our ascent we obtained proof that the thickness was even greater than this, for we found that the ice had perched blocks of granite and gneiss on the sides of the volcanic hills not less than 1600 feet above the present plain of the river, and that it not merely filled up the main valley, but actually over-rode the bounding hills so as to pass into some of the adjacent valleys. That