

keep my feet warm as I crawled up the glacier. Ordinary boots, under the conditions of this ascent, would have been worse than useless, but I found much advantage in wearing my old rubber-soled boots. For a little while after being put on they were cold, owing to the frozen moisture they contained, but as this thawed they became warm and comfortable; the rubber soles rendered my footing on the ice secure, and they wore well. It was not till about half-past three that we reached the top of the Mamakul Pass, where, somehow, the wind was less violent than in the ascent, and the bright sunshine raised the temperature a few degrees. Taking a hopeful view of the situation, I set to work to boil thermometers and ascertain the height of the pass, but the operation proved exceedingly trying. In order to handle the hypsometer more easily and to light the candle, which was sheltered from the stiff breeze by Abdul Karim's and Mohammed Joo's coat-tails, I removed my thick gloves and my fingers repeatedly became numb. The cold was so intense, and the wax of the candle was frozen so hard, that the heat emitted by the three wicks, whose tips, after a vast expenditure of vestas, I succeeded in lighting, was unable to melt it, and we had to pile little pieces of old candle ends round the tiny flames till the wax began to melt and the metal work to become warmer. When the candle was properly lighted our troubles in this operation were ended, for the hypsometer was so well designed by Casella that no wind ever blew it out. While the ice was melting I ran about and stamped my feet to keep my blood in motion and prevent frost-bite, and as soon as the water boiled I made my notes, packed up the instrument, and began the descent. To attempt topographic work in such circumstances was out of the question; but we were able later to ascertain the position of the pass and lay it down accurately on the map. To me, though