

»It is beyond dispute that the Himalayan glaciers came down to a much lower level in the past than they do to-day. Ancient moraines and evidences of glacial action have been noticed at elevations varying from 5,000 feet to 8,000 feet by Hooker, Macmahon, Godwin Austen, Blanford and others. The theory, once held, that the Himalayas then stood at a greater elevation than is the case to-day, may be at once dismissed, and we can safely admit that much lower temperatures prevailed in the Himalayan region at that period. It does not, however, follow that the temperature of the Indian peninsular area was appreciably lowered thereby.»¹

The glaciers of Himalaya and Kara-korum begin in our days to attract more and more attention. Some of the last visitors to the Kara-korum glaciers have been able, by comparing their own maps with those of GODWIN AUSTEN and others, to tell whether certain snouts have advanced or retreated. Such records will be more reliable and numerous in future. And there will be a special study of the influence of the monsoon rains upon the movements of the glaciers. We do not need to go far back in time to become completely lost as regards information in these matters. An augmented precipitation over the mountains will cause the snows to accumulate and the glaciers to become more active and *vice versa*. But the glacier movement is always delayed. The rise and fall of the levels of the Manasarovar and the Rakas-tal would afford a much more delicate, reliable and convenient instrument for reading the hydrographical influence of the precipitation. And if such records were carried out for any considerable length of time, say 100 years, it would be possible to tell in which direction the climatic changes proceed and with what speed, during the present period. One should get the values of the periodicity, at least for the second and third order; for the highest order a much longer time would be necessary.

But such regular records are, and will probably remain nothing but pious *desiderata*, and at the present moment all we can do is to collect as much material of observation as possible, and to try and draw out some general conclusions from it.

The Tibetan plateau-land is very rich in lakes. As mean altitude for 37 lakes in Western Tibet I found 4,837m., and for 58 lakes in Eastern Tibet 4,811m., so that the western lakes proved on an average to be 26m. higher. Comparing, for instance, DEASY's six highest lakes in Western Tibet with my six highest lakes in Eastern Tibet, I obtained means of 5,056m. and 5,001m., proving that Deasy's lakes were on an average 55m. higher. But, as a rule, there are extremely small differences in height between different lakes on the plateau-land. Only when we approach the boundaries of the plateau-land, the absolute altitude of the lakes becomes less, the Manasarovar being at 4,602, Panggong-tso at 4,317, Jamdok-tso at 4,210, Achik-köl at 4,250, and the Upper Kum-köl at 3,882m.

¹ »On the changes of climate in India during the Postglacial portion of the Pleistocene»; in »Die Veränderungen des Klimas seit dem Maximum der letzten Eiszeit», 11 Internat. Geologenkongr. Stockholm 1910, p. 441.