

through the Tibetan plateau-land where the precipitation is very poor. But it is sufficient for keeping the channel in function the whole year round. December 8th, 1901, at Camp CXLIV, I found its breadth to be 11,2 m., its mean depth 0,475 m., its mean velocity 0,591 m. and its volume of water 3,14 cub. m. per second. Fresh marks on the banks told me that the river, probably during the previous summer, had been 44 cm. higher and had carried about three times as much water as in December.¹ Probably most of this water comes from springs, flowing the whole year round. The area of the Tso-ngombo including all the freshwater basins, is about 250 square km., which is not half as much as the 558 square km. of the Manasarovar.² Disregarding the volume of all the affluents of the two lakes, which is unknown in the case of Tso-ngombo, it is obvious that the Manasarovar, in spite of the 29 cub. m. of water it received every second in July and August 1907³, suffered so great losses by evaporation that it could not send a drop of water to the Rakas-tal. Only in 1909, 1910 and 1911, when heavy rains fell, its channel during the summer months again entered in activity.

The Tso-ngombo loses less than half as much water by evaporation, and therefore its channel to the Panggong-tso is always in activity. In fact, the chain of lakes is more like an enlarged river-bed where the current in summer must be perceivable at every narrow place. In Jarin-nor the evaporation will be about the same as in Manasarovar; but as the Saloma probably carries more water than all the Manasarovar affluents together, the upper Hwang-ho lake can probably always send an effluent to the Orin-nor. The latter lake, on the other hand, has a more favourable situation in that its other affluent, the Jagiyn-gol, avoids the Jarin-nor and therefore loses not a drop of its water by lake evaporation.

Comparing the most recent stages of development in the history of the three pairs of lakes we may sum up their relations in the following points:

1. The Jarin-nor and Orin-nor are still in full activity the whole year round, belong to the Hwang-ho and drain to the ocean.
2. The Manasarovar periodically and only during the summer drains to the Rakas-tal, whereas the Rakas-tal for 150 or 200 years has been cut off from the Satlej and the ocean. But as the latter lake is still fresh, the two lakes must be regarded as still belonging to the Satlej and the Indus system.

¹ Scientific Results, Vol. IV, p. 304. *Vide* at the same place two photographic views of the channel.

² Professor W. HALBFASS of Jena has, from my data, calculated that Manasarovar has an area of 558 sq. km., a volume of 30,7 cb. km., a mean depth of 49,5 m., a circumference of 96 km. and that it in volume stands between Lago Maggiore, 37 cb. km., and Lago di Como, 27 cb. km., and in area between Lac de Genève, 582 sq. km. and Bodensee, 538 sq. km.

³ Cf. Vol. II, p. 187.