

run from the Kala-tso, as is represented by many maps. It rises in a full head of water that breaks from under an old glacier bed which fronts the eastern end of the Kala plain, and flows with an even and increasing current in a northerly direction.»<sup>1</sup>

On Ryder's map the main branch of Nyang-chu comes from the mountains west of Yamdok-tso, whereas the Kiang Lope Chu, which originates from the neighbourhood of Kala-tso, is a tributary. Ryder says in his text: »There is no outlet to the Kala Tso, but there are obvious signs that in ancient times the water flowed out of the lake into the narrow gorge, and so to Gyangtse and the Tsangpo. About 8 miles from the lake in this direction a small stream rises from what is probably an underground flow from the lake, and flows in a broad and deep bed down the gorge.»<sup>2</sup>

At the present time Yamdok-tso seems not to possess an outlet, but of Rung-chu, which flows into the Tsangpo, Ryder says: »I have no doubt whatever that this is the old outlet of the Yamdrok Tso, which now is land-locked.» As the lake is fresh it may be an analogy to Rakas-tal and the Satlej.

As in the case of the source of Nyang-chu the opinions are so different with Europeans who have visited the place almost simultaneously, one should not expect too much from other tributaries to the Tsangpo. It should be remembered, however, that Turner on his map makes the river rise not from, but east of the Kala-tso and that he even writes on his map: »Sources of the River Painom-tchieu.» This view is obviously quite correct and there is no probability for a periodicity of the same kind as the Rakas-tal and Satlej. Of Bogle's visit to the lakes Markham says: »Four days after leaving Pari, Mr. Bogle discovered two large Alpine lakes, colled Shamtzo and Calutzo, connected with each other by a stream. He also traced the river flowing out of the Calutzo Lake, and found that to be a tributary of the Brahmaputra, and identical with the Penanang-chu. The name of the second lake and the direction of the outlet are entirely new geographical facts.»<sup>3</sup>

Colonel S. G. BURRARD places the Nyang-chu very clearly in the following words: »The Nyang tributary rises near two lakes north of Chumalhari, forces its way through the Ladak range, and falls into the Brahmaputra near Shigatze. It is the only Tibetan tributary of the Brahmaputra that drains the great Himalayan range and the only river east of Manasarowar that pierces the Ladak range . . . The Arun, the Kali Gandak, the Birehi and others rise in the Ladak range and pierce the great Himalaya, the Nyang rises in the great Himalaya and pierces the Ladak.»<sup>4</sup> He regards the Ki-chu as rising from the Nien-chen-tang-la range and forcing its passage through the Kailas range. He regards the bifurcation of the Kailas range

<sup>1</sup> Lhasa, London 1905. Vol. I, p. 163.

<sup>2</sup> Geographical Journal. Oct. 1905, p. 372.

<sup>3</sup> »Travels in Great Tibet . . .» etc. Journal Royal Geogr. Society, Vol. 45. 1875, p. 303. Possibly the Chon-tala on d'Anville's map is identical with this place. If that be the case d'Anville has the river as starting from the lakes.

<sup>4</sup> A sketch of the Geography and Geology of the Himalaya Mountains and Tibet. Part III, Calcutta, 1907, p. 156.