

the lake, he found hot springs. From Yeshil-kul a valley goes directly S. S. W. to Apo-tso.

The name of this lake is generally written Arport-tso. Horpa-tso or »Turki Lake» is certainly wrong. Zugmayer writes Apo-Zo or »Grandfather Lake», in connection with some legend, which seems doubtful. He regards it as the highest lake known in Tibet, which agrees with my examination of the heights of Tibetan Lakes.¹ The records of BOWER, DEASY and RAWLING are different from Zugmayer's and differ amongst themselves. In the N. E. is — or was — the effluent, about which the records also differ very much. On the maps of Deasy's and Rawling's journeys the lake drains to Yeshil-kul, a statement which Zugmayer believes to be thus far correct; that the lake formerly drained to Yeshil-kul, but not nowadays. HARGREAVES told Rawling that the effluent was underground, but farther N. E. again appeared bursting forth with great violence, and forming a river of considerable size and sufficiently deep to prevent ponies from fording it. Zugmayer, however, agrees that at very high water-level there may be an effluent even nowadays.

I doubt very much the existence of the four islands Zugmayer believed he saw, and which probably are only promontories from the surrounding mountains. Rawling says the lake does not diminish in area, but Zugmayer found from old beach-lines that it had been very much bigger formerly. The level of the lake was found to be about 8 m. below the sand walls at the north-eastern shore. On these walls four terraces were visible, which correspond to the shore-lines, west of the lake. Beyond, or N. E. of the wall, the ground falls to the N. E., and in the valley some small pools were seen. The old bed was 2 m. deep. Farther down the valley some water appeared from the ground. At the northern shore Zugmayer like Rawling, found the water slightly brackish, which would be impossible if there were any effluent whatever. There are fishes, *Nemachilus*, crustaceans and insects. The form he gives the lake on his map, approaching a regular square, is *a priori* wrong, as it is in reality divided into two basins, connected with each other by a very narrow passage, where I crossed the Arport-tso on the ice in 1908. The plain west of the lake he calls the »Sumdschiling» Plain (= Sumjiling).

The Mang-tsaka is also diminishing as already had been stated by Rawling. As Zugmayer's Camp XXIX, 5,370 m., was about 170 m. above the surface of the Mang-tsaka, he could judge from old beach-lines that the lake must once have stretched the whole way to Lanak-la and included the Arport-tso and Yeshil-kul, and must have been like the Panggong Lakes. In the hot springs of Mang-tsaka he read temperatures of 21 to 40.5° C. In the brook from the sources he found *Nemachilus*, *Limnæa*, and *Gammarus*.

¹ *Scientific Results of a Journey in Central Asia 1899—1902.* Vol. IV, p. 589—592.