

the graduated (3 m. distances) rope was fastened to precisely the same poles, set up one on each bank. The reason why, notwithstanding so great a drop as $10\frac{1}{2}$ cub.m., the breadth only diminished by 0.3 m., is that the scarped banks just there are virtually vertical. The fact of the mean velocity of the current being a few cm. more at the latter date, in spite of the decrease in the volume, may have been due to a more rapid evaporation in the lakes lower down, induced by the greater heat of the season, or to a fortuitous coincident augmentation of the contributories higher up the river. Colour is lent to the latter supposition by our finding at Jangi-köl on 16th May a volume of 66.03 cub.m., or 12.5 cub.m. less than at Kirtschin seven days later, and this in spite of the heavy contributions that were levied upon the stream in the interval between these two points. On the 7th May the volume amounted to 23 cub.m. more than it did on the 16th May, as indeed we should naturally expect, for, as we have already seen, the *mus-suji* or main body of the flood caused by the melting of the ice, had passed as early as the middle of March. After that the level drops, at first with exceeding slowness, but more rapidly as the season advances. Instead of a steady drop, as we should expect, between the 16th and 23rd May, we have on the contrary a rise of 12.5 cub.m., and that at a period of the year when we should least of all expect it. One might perhaps explain the occurrence as due, say, to the opportune arrival of the spring freshets of the Ugen-darja, were it not impossible for the melted snows of the headwaters region to have reached Kirtschin so early. The explanation is to be sought in another direction, and I think I may claim to have discovered it.

In the preceding pages I have enumerated a whole series of marginal lakes, increasing in number as we advanced down the river. During the winter these are cut off from the stream, and they dwindle in area, not so much because of evaporation as from absorption into the ground. The ice in the lakes melts later than the ice in the river; nevertheless when the great spring freshets (*mus-suji*) come pouring down, these naturally find their way into the marginal basins, and so great is the total volume of these freshets that, in spite of the drain thus made upon them, the river continues to rise, and pours itself into the lakes, until their levels equal its own. When that equilibrium is brought to pass, the entire body of the spring flood rolls on undiminished down the main channel. Then the river begins to drop, and as it does so, the marginal lakes begin to send back to it through their several canals the overflow water which it recently contributed to them. In this way the level of the river again rises, though it is only for one or two days that the rise is perceptible; for the fluctuation is speedily swallowed up in the general fall, which at this season characterises the river, and which goes on until it reaches its lowest summer ebb.

Here I must call attention to a circumstance which will be discussed at greater length lower down. When on 7th May the volume of the river amounted to 89.06 cub.m., about 1.5 cub.m. of this issued from the Ullugh-köl; on 23rd May the Tarim carried 78.58 cub.m.; and on the 21st a current of 6.667 cub.m. flowed into the Ullugh-köl. If however we disregard the effect of this little lake, that is to say, if we take the measurements above its canal, the volumes on the 7th and the 23rd May respectively would have been 87.56 and 85.18 cub.m., or a difference of only 2.4 cub.m., instead of 10.5 cub.m. Seeing then that this was the effect of *one* lake