

quence of the varying volume of the Tarim. And so powerful is the current in the canal at the two high-water periods that the mud, which accumulates there during quieter seasons, is carried out into the lake, and the canal itself is excavated still deeper.

On the 20th May, then, the Karaunelik-köl received 2.3 cub.m. of water in the second, or 138 cub.m. in the minute, 8,280 cub.m. in the hour, and 198,720 cub.m. in the course of the 24 hours. If now we assume, to begin with, that this flow had been maintained since the 15th March, when the spring freshets first made their appearance at this spot, then during the 66 days which elapsed between the two dates named the lake will have received 13,115,000 cub.m. of water. But in point of actual fact, the inflow has been much greater than this. According to the measurements I made, the volume of the river was

| | | | |
|-----------------------|---------------|--------|--------|
| at Schirge-tschapghan | on 19th April | 101.86 | cub.m. |
| » Kirtschin | » 7th May | 89.06 | » |
| » Jangi-köl | » 16th May | 66.03 | » |
| » Kirtschin | » 23rd May | 78.58 | » |
| » Arghan | » 4th June | 73.08 | » |
| » Schirge-tschapghan | » 10th June | 61.38 | » |

Thus we find that at this season the river drops swiftly, though between the 16th and 23rd May there was an unexpected rise. At Schirge-tschapghan the loss of volume amounted to 40 cub.m. in 52 days, and at Kirtschin to $11\frac{1}{2}$ cub.m. in 16 days; equivalent in the former case to a fall of 0.77 cub. m., and in the latter to a fall of 0.72 cub. m., in the 24 hours. On 20th May the Tarim had at Karaunelik-köl a volume of about 72.0 cub.m. Had the volume decreased regularly at the same rate from the arrival of the high-flood, that is from about 15th March, the river here would have had a volume of 126 cub.m. in the second. When the river had a volume of 72 cub.m., the Karaunelik-köl drew off 2.3 cub.m. in the second; when the river's volume is 126 cub.m., it is to be assumed *à priori* that the inflow into the lake is very much greater. On the assumption that the changes involved are proportional, the inflow ought then to be 4 cub.m. in the second, or 22,700,000 cub.m. in 66 days. But on 15th March the level of the lake was as shown in (5) in fig. 229, and the water was rushing through the canal like a mill-race. During the winter the surface of the lake had subsided in consequence of the absorption of its water into the ground, and it had been cut off from the river, so that now its suctorial force was inconceivably great. Had the river been then half a meter higher than it was on the 20th May, and had the velocity of the current through the canal been one meter in the second, the canal would have fed the lake to the extent of 19 cub.m. in the second. Except for a vigorous inflow such as this, it would be difficult to explain how, on 20th May, the lake was filled to the level of the river; with an inflow of only 2.3 cub.m. in the second it would be impossible. Thus the estimate 19 cub.m. is if anything too low. If we assume that the mean between this figure and the figure (2.3 cub.m.) obtained by measurement, or say 10 cub.m. in the second, was the value of the inflow during the 66 days, then we obtain a total inflow for that same period of 57,000,000 cub.m., or a solid cube of water each of whose sides measures 385 meters. Let us, to avoid all risk of exaggeration,