

subject to considerable variation according as it is affected by the inclination of the surface, the accession of tributaries, the volume, the age of the channel traversed, and so forth, in a word, by the various factors of a physical-geographical character which will be all discussed in the following pages. On the other hand I disregard the effect which the atmospheric and similar conditions have upon the rate of flow of the current. The parallelism, which unquestionably exists in this respect, can be deduced directly from the meteorological tables contained in another volume of this work. I would merely observe here, in this connection, that the volume of the stream depends upon the season, in such a way that high water follows upon the melting of the snows, and is then succeeded by low water; that the maximum volume is found in different sections of the stream at different periods, a consequence of the river's great length; that the formation of the ice and its break-up are dependent upon the temperature of the atmosphere; and that the distribution of the atmospheric pressure, the direction of the prevailing winds, as well as the storms, may to some degree at least exercise a varying effect upon the rate of the current. Nor are these the only external conditions by which the volume is determined. It is also affected by the presence of marginal lakes or lagoons, which, when they are present in considerable numbers, very appreciably retard the period of high water, so that, for example, in the lowermost reaches of the Tarim, this period occurs three or four months later than it does at the confluence of the Ak-su-darja with the Jarkent-darja, and five months later than it does in the Raskan-darja. Yet what relation exists between the volume of this river and the progress or decay of agriculture in the oases of East Turkestan, or how far the one is dependent upon the other, is not easy to say, owing to the absence of trustworthy and sufficient statistics. But that the complicated system of interlacing irrigation canals, which circulate over the greater part of the area of these oases, must of necessity diminish the volume of the river before it reaches its termination at Kara-koschun, does not admit of any doubt.

The task therefore which I have set myself in the following chapters is to present a detailed description of the geography of the Tarim. I shall deal with the river-bed and its varying conformation in different parts of its course, as well as with the changing character of its erosive action upon the surface of the regions it flows through. The bends or sinuosities of the river, its silt-beds, its alluvial deposits, its banks or erosion terraces, and their varying character according as the stream makes its way through forests, steppes and sand-deserts, or washes the foot of detached mountains; the highways, the riparian population and all that concerns them, the irrigation canals, the navigation of the stream, and its fisheries — all these will be successively dealt with as far as my observations, and the information I gleaned about them, will admit. And I shall everywhere give the geographical names which are used in connection with the river itself, or in the immediate vicinity of its banks. Still, the main channel, and the hydrographical relations of its current, will be the principal subjects of consideration throughout. Indeed, considering my means of locomotion, namely that I travelled by boat, and had neither horse nor camel to ride, I cannot very well discuss anything else except the river and the circumstances connected with it. Apart from the actual drift down-stream, I have nothing to record except one or two short trips on foot or in my sailing skiff.