

power to carry sedimentary matter. To this it might be objected, surely at the season when its volume, like that of the Tarim, is far greater than it was in the autumn when we saw it — surely it possesses then the necessary transporting power! But under such conditions we should of course expect to find its bed shaped in the same way as the bed of the Tarim, and alluvial deposits to be formed at least in the convex angles of its windings. And yet these are entirely absent; the river presents everywhere the same steep banks, without alluvium, that it does near its confluence with the Tarim. How then are we to account for it, that the river resembles an artificial canal, being of almost one uniform breadth throughout, and everywhere deeper than the main stream? That the channel is not the result of erosion, effected under conditions such as those which now prevail, is clear, for if the stream is not powerful enough to carry in suspension the most finely comminuted particles of matter, manifestly it can possess no erosive power. The following theory, which I have hit upon, conveys, so far as I can ascertain, the only likely explanation that meets the circumstances of the case.

The Ugen-darja is a very old stream, and coincides with the direction taken by the principal artery of the Tarim system at an earlier date: that is to say, all the water of this system flowed anciently down the bed of the Ugen-darja. For, as compared with the Ugen-darja, the existing Tarim is a new creation. Above Karaul the ancient river travelled through the district in which the Tschong-köl is now situated, and then continued along the channel which is at present used by the Intschkä-darja to reach the Kontsche-darja; then, crossing over Jing-pen, it flowed eastwards through the bed now known as the Kuruk-darja, in the way that I shall describe in detail in a later chapter; and finally it issued into the ancient Lop-nor. The Ugen-darja is thus the last remaining section of a portion of the ancient Tarim — a fragment of a river, a *flumen relictum*, in no sense a moribund or dried up waterway. On the contrary, it is a stream the energy of which has shrunk to insignificance, and has become converted into a mere conduit for the passage of such water as chances to find its way into it. Streams of this character are quite common in the terminal regions of the Tarim hydrographical system, and we shall subsequently have to deal with far more pregnant examples than the Ugen-darja. In fact, these streams form a distinctive type of river; they are nearly always accompanied by luxuriant vegetation, except where this has been smothered by the encroaching sand. They put me to some extent in mind of the creeks of the Schat-el-Arab at Basra, which plough their way through a perfectly flat and level country, as I observed when I visited that part of the world in 1886.

The existing Ugen-darja is, in my opinion, the deepest eroded trench* or *thalweg* of the ancient river, that is to say, of that part of it which always carried actually running water, winter and spring alike. The existing Tarim, like every other river, has of course somewhere or other in its course a similar trench; which

* The lowest extremity of the Ugen-darja is not however so old as the rest of the river, in which the depth is so considerable, and the banks of which I found in 1896 to be 6 m. high. When the stream abandoned the Kuruk-darja channel, the Tarim separated from the Schah-jar-darja or Tschajjan at Tschong-köl, and swung away to the south-east. Above the district of Tschong-köl therefore the Ugen-darja is older than the section between Tschong-köl and Karaul.