

before; life ceased, and the conditions of subaërial deposition returned, and continue even at the present day.

As CUNNINGHAM, the SCHLAGINTWEITS and others really proved that the lakes formerly had been bigger, the false theory that all terraces were lacustrine, was accepted.

Regarding the relations between the lakes and rivers of Tibet and the climatic changes, Richthofen has the following important theory:¹ The salt lakes actually existing in Western Tibet are the remains of larger lakes existing in bygone times. Some of these had an outlet allowing animal life. This period, with more abundant precipitation than nowadays was preceded by a much longer period with dry climate and small salt lakes. The valley of the Indus in those early days consisted of a series of basins without outlet. At that epoch the subaërial processes were active in filling up the depressions even to the passes of the surrounding mountains and probably still higher. In this way the trough and basin-shaped plains were formed, the surface of which at the edges reaches several thousand feet above the lakes and rivers, which in our days are seen in the deep central parts. The transition from the earlier to the later period took place by a gradual change of the climate by which the self-contained lakes increased in size and, as now the Koko-nor and Tengri-nor, occupied a comparatively large area of their basins. Some of them finally got an outlet and joined each other into systems which, by way of the Indus, found their escape to the sea. The Indus, therefore, according to Richthofen, was formed in the same way as the Hwang-ho. Further he says that the rivers during the period of outlet worked their beds deeper and deeper; in this manner lateral gorges with terraced slopes were formed in the steppe deposits. With the beginning of the dry climate of the present period, those lake basins that had no outlet decreased in size, whilst others, whose canals of effluence had not yet eroded their beds *au niveau* with the bottom of the lakes (as *e. g.* the Panggong and Tso-moriri) were cut off. Naturally the area of all decreased and the salinity increased. Such basins which, as the Chang-chenmo, had already been formed into river systems, by the enormously energetic activity of their effluents, remained as such in spite of the desiccation.

Any attempt to explain all these phenomena in a perfectly reliable way, to find their relations to the ice-periods *etc.*, would at present be only hypothetical. It can be done only after a thorough geological survey of the whole of Tibet and the surrounding regions. Richthofen, however, more than forty years ago, has shown the way, and he has had several successors, amongst others LÓCZY and HUNTINGTON.

Our knowledge of the orography of eastern Asia was chiefly prepared by KLAPROTH'S researches in Chinese geographical sources. But, as RICHTHOFEN puts

¹ Op. cit., p. 137.