

90 m., and in the middle of the area may easily have been more. In the western half of the area it was plain that the leeward slopes face the east; and very often they plunge down to the bottom of the valley with a strikingly precipitous descent. Altogether there are only one or two small patches of saj, that is hard and barren ground, with a thin scattering of small gravel. These patches of saj also stretch slowly down towards the marshes. The deepest part of the valley lies however quite close to the edge of the sand. Consequently the base upon which the sand rests likewise has a gentle slope towards the north and north-west, and occupies pretty nearly one-half of the breadth of the valley. In the west the lake presented the appearance of a small glittering expanse. Over against its southern shore the sand is very considerably less in altitude; to the west of our Camp No. XVI the dunes were low and small.



Fig. 54.

At 3.30 p.m. a violent storm from the south-east set in, a violent wind accompanied by hail and pouring rain. One would expect that a beating, driving shower such as that was would at any rate tone down and to some extent wear away the sharp crests of the dunes; but the rain-drops are unable to do more than dimple the surface of the sand, and even the little shallow holes which they make in it are not seen except upon a close examination. Otherwise the shape of the dunes, and the sharpness of their outlines, are in no degree affected by the rain; they merely assume a slightly darker tint. Nevertheless there is every reason to believe, that after such a rain, which must penetrate pretty deeply into the dunes, their movement will for some time, even though it be for only one or two days, be in abeyance. In any case it is extremely interesting to find that the origination of continental dunes is practically quite independent of the absolute altitude above the sea and of the climate. This idea is suggested by a comparison between the Kum-tagh that stretches south of Pitschan and this drift-sand area south-east of the Kum-köl. The former occurs in an excessively arid region, a perfect desert in fact, lying but little above the level of the sea. The latter exists in a mountainous country more than 4000 m. above the level of the sea, and where there is a considerable precipitation. Were it not for the moisture of the atmosphere there would originate here a sandy desert, which would eventually fill up the whole of the basin of Kum-köl.

The violent alternations of weather, with its abrupt changes, that is characteristic of Tibet were even more noticeable in the basin of Kum-köl than in the Tschimen valley. For instance, at noon the thermometer would stand at 20° above zero and the atmosphere would be perfectly still and bright, and yet only a short while afterwards the valley would be swept by a violent wind and an icy hail-shower. The atmospheric moisture increases not only with the altitude, but also from north to south.

The occurrence of this violent change in the weather afforded us an opportunity to note a curious effect produced in the animal life of the region. So long