The relationship of topography with the geological features is discussed in this chapter, besides evolution of the Renuka Lake and Paras Ram ka Tal.

The scenery of the Tal area is contrasted by rugged and gentle sloping terrains. The Krol 'limestone' sequence, Chert Member and the Upper Tal (Plate 16a, figs. 1-2) form precipitous slopes while the Carbonaceous Member and Middle Tal form gentler topography. Alternation of these geological horizons provides with a contrasting topography, easily discernible in aerial photographs.

RIVERS

The rivers and nala flow along following geological features:

1. Along the softer rock, and avoiding the harder rocks: Best example of this type is provided by the Jagar ka khala which strikingly flows through the Carbonaceous Member very near its contact with the Graywacke Member. As the contact of these members along fold closure is circular, the Jagar
ka khala also forms a circular course avoiding as far as possible cutting through the Graywacke Member for a considerable distance. In south it turns south and cuts through the Infra Krol Formation.

2. Along the anticlinal axis: Most of the streams fall under this category. These streams flow either along \( F_1 \) or \( F_3 \) anticlinal cores. Due to this reason there are two main directions of streams that course under this sub-head.

3. Along fault or thrust planes: The Giri River between Dadahum and the Sataun more or less flows through the traces of the Krol Thrust and Chail Thrust (as defined by Bhargava, 1972). Several smaller nalas flow along the cross-faults.

Besides these, there are certain streams, which do not follow any of these patterns. The author has at present no explanation as to the probable control for such streams.

The drainage of the area is, therefore, subsequent to structure, which exercised a parental control on its development.

RIDGES

The ridges in the area are controlled by (i) lithology:
The more weathering-resistant rocks (like dolomite, quartzite, etc.) form ridges and (ii) by synclinal/synformal axes:
Most of the prominent ridges fall under this category (e.g. Juni dhar, Choyat ka tibba, Oddu dhar, Ramu-ki-dhar, Giltu-ka-Tibba, etc.). Due to this control, the ridges like F₁ and F₃ folds, trend in E-W and N-S directions.

TERRACES

The Giri river is associated by three terraces at various levels the oldest of which has been seen about 250 m above the present bed. The occurrence of these terraces affords an excellent example of deepening of the valley, probably due to concomitant rise of the Himalaya.

The terraces are mostly of river type, however, some terraces formed chiefly by lacustrine material are also seen (e.g. terrace at Sataun). It is likely that large landslides in past might have dammed the course of the Giri river resulting in the formation of lakes similar to Gohna lake in the Almnanda valley. Such lakes would have been the site of deposition of fine silt. Bursting of such dams (similar to Almnanda tragedy of 1970) must have restored the flow of the Giri river.
ORIGIN OF THE LAKES

From left bank of the Giri river near Beraun upto the Remuka Lake, there occurs a thick cover of alluvial silt. This alluvial tract is further continuous from the eastern tip of the Renuka lake to the Giri river bed near Nuwan, through Nuwan nala (Fig. 38). The height along the tract from the Renuka lake to the Giri river bed at Nuwan gradually falls.

It is suggested that the alluvial tract, between Giri beds at Beraun and at Nuwan, through the pit of the Remuka lake represents the earlier course of the Giri river (Text Fig. 39).

The Renuka valley is narrowest near Kiar. It is suggested that due to a landslide near Kiar (east of the present site of the Remuka lake), the Giri valley was dammed. Then due to southward cutting and also probably due to headward erosion through a small nala, the Giri river captured the valley of the Jalal river near Dadahu. The abandoned course of the Giri river formed a large lake, which probably maintained source of water through the
Text fig. 38. Present course of the Giri river and location of the Renuka lake.
Text fig. 39. Proposed original course of the Giri river.
underground seepage of the Giri river. Due to silting up and drying, the lake was fragmented into two, i.e., the Renuka and Paras Ram lakes. The present decrease in height of 40 meters from the Renuka lake to the Giri bed, towards the upstream side is explained due to subsequent deepening of the Giri river valley, and also silting up of the lake site.