CHAPTER VI

CONTACT RELATIONSHIP OF VARIOUS MEMBERS

The contact relationships between various members as interpreted on the basis of field data are described here. These relationships eventually will be helpful in fixing the sedimentological breaks at various stratigraphic levels.

LOWER TAL

1. Earthy Siltstone Member: It is mostly developed in the entire syncline except the stretch between (i) Dana and Dochi, (ii) north of Skandem, (iii) Haryas and Jarag and (iv) between Naun and Rajana (Plate 17). The absence of the Earthy Siltstone Member, on the basis of disturbed nature of contact has been interpreted in the map due to tectonic elimination.

   The Earthy Siltstone Member in complete sections rests over the Earthy Dolomite Member and, in turn, is overlain by the Chert Member. Its contact with both these Members is normal.

2. Chert Member: The Chert Member is also present in most part of the Syncline except between (i) Dochi and Ghatton
Text fig. 13. Development of the Lower Tal in various sections.
Text fig. 13 illustrates the sequences of these in incomplete sections. From this figure, it is apparent that in all these sections, the Earthy Dolomite, the Earthy Siltstone and the Chert Members either collectively or individually are missing. It can be further noticed that the Earthy Dolomite and Earthy Siltstone Members, though largely absent, are seen in some of these incomplete sections. The Earthy Dolomite Member, for example, is seen at (i) northeast of Skandon and (ii) northwest of Skandon, (iii) between Jarag and Banda and (iv) between Sangar and Rajana.

From above description, it is evident that it is only the Chert Member, which is uniformly absent in all the incomplete sections, where, at present, exists a thrust along the lower contact of the Carbonaceous Member. No thrust, the author feels, should be so choosy as to eliminate only one particular bed (especially if it is brittle and cannot serve as a lubricant) in all the sections. In view of above, the author suggests that in these sections, the absence of the Chert Member marks a local hiatus between the Earthy Siltstone Member and the Carbonaceous Member.
Direct evidence of depositional break is encountered in the Korgai Syncline, where boulders of the Massive Dolomite Member are found embedded in the Carbonaceous Member at Chaori Pathri, Bohal and Shamyala.

The unconformity being a plane of weakness, facilitated movement of overlying sequence during the Tertiary Orogeny.

Thus the author confirms Auden's (1934, p. 403) suggestion that such incomplete sections are "due probably to a combination of original unconformable overlap of Tal across the stages of the Krol limestones and of later tectonic eliminations".

MIDDLE TAL

1. Graywacke Member: This Member has a transitional relationship with the Carbonaceous and Banded Siltstone Members.

2. Banded Siltstone Member: It has a conformable contact with the underlying Graywacke Member. In the upper part of the sequence, the Banded Siltstone Member has quartzite interbeds akin to the Lower Quartzite Member. Its contact with the Lower Quartzite Member, in field, looks conformable. Under microscope, however, in certain sections (e.g., Kathwar,
and Dabrog) there appears to be a sudden change in grain size, roundness and sorting from the Banded Siltstone Member to the Lower Quartzite Member.

This observation may suggest a plane of disconformity of local magnitude in these sections.

**UPPER TAL**

1. **Lower Quartzite Member:** This Member has a conformable relationship with the overlying Shale Member.

2. **Shale Member:** Its lower contact as stated in preceding paragraph is conformable with the Lower Quartzite Member. Its upper contact with Arkosic Sandstone Member is rather abrupt.

3. **Arkosic Sandstone Member:** It has a gradational relationship with the overlying Limestone Member.

4. **Limestone Member:** The Limestone Member in the upper part becomes sandy and passes into the Upper Quartzite Member.

**KROL-TAL BOUNDARY**

The Earthen Siltstone Member in fully developed sections forms a passage bed between the Earthy Dolomite and the overlying sequence (the Chert Member). The obvious
question thus arises whether to include the Earthy Siltstone Member in the Krol or in the Tal Formation. Local sedimentological break found above the Earthy Siltstone Member in southern part of the area favours inclusion of the Earthy Siltstone Member in the Krol.

The Krol Formation is predominantly a calcareous sequence, while Tal Formation is undoubtedly an arenaceous-argillaceous succession. Due to this reason, the present author has placed the Krol – Tal boundary at the base of the Earthy Siltstone Member.

The evidence of local break is not of much significance in the classification of lithostratigraphic sequences, as local breaks can occur in the same formation at various stratigraphic levels also. The classification of the Krol and the Tal Formations is based on overall composition of lithounits, which are direct results of different paleoenvironments of the basin.