

CHAPTER VIIIR E S U M ESUMMARY

The author has reinterpreted the various aspects of the geology of Chaukhutia and its neighbourhood, and his observations and conclusions are of regional importance also.

The rocks of the study area belong to two tectonic units Almora Nappe and Krol Nappe separated by North Almora Thrust. According to previous workers, this thrust extends along the Khastari Gadhera. The author has worked out a tectonic framework which is quite different from the one suggested by Gansser (1964), and according to the present

author the Almora thrust that separates the overlying crystalline from the underlying metasedimentaries, is nowhere outcropping, and the dislocation along Khastari Gadhera considered as N. Almora Thrust is only a later fault. The present author has envisaged a major anticline in the metasedimentary sequence of the Krol Nappe and a reverse fault along the crest of this anticline.

The geological framework suggested by him is as under:

Mica schists with gneisses and quartzites	⋈	Karchuli Group	Almora Nappe
-----Khastari Fault-----			
Quartzites with subgraywackes	⋈		
Chlorite schists (foliated spilites tuffs etc.)	⋈	Chaukhutia- Manwa Devi Group	Krol Nappe
Dolomitic limestones	⋈		
Slates and Quartzites	⋈		

The rocks of Karchuli Group lie on the south western limb of the anticline while the rocks of Chaukhutia-Manwa Devi Group form the northeastern limb. The Khastari fault appears to be such that the Krol Nappe slates and quartzites

have been pushed over the sheared gneisses of Almora Nappe.

The crystalline rocks lying to the ^{west} east of Khastari Fault constitute the Karchuli Group. The main varieties are garnetiferous mica schists, micaceous quartzites and sheared gneisses. The metasedimentary sequence comprising Chaukhutia-Manwa Devi Group, though younger than Karchuli Group, structurally lies below the latter. The rocks of this Group show following ascending sequence:

Quartzites and subgraywackes

Foliated spilites, tuffs etc.

-----Unconformity-----

Dolomitic limestones

Slates and quartzites

The sedimentary structures and the attitude of stromatolites in dolomitic limestone clearly indicate that the beds do not show any large scale inversion. A significant observation is that regarding the chlorite schists and quartzites that rest unconformably over the

dolomitic limestone. The former comprise metamorphosed spilitic basalts and tuffs. The quartzites and subgraywackes also contain lensoid bands of spilitic rocks.

The various deformational events that have affected the area, have been fitted in the general scheme of the tectonic evolution suggested by Merh (1968) for the part of Kumaon as under:

	<u>Chaukhutia area</u>
1. Isoclinal folding in the Almora crystallines (F_1) with related schistosity	Schistosity in Karchuli Group
2. Culmination of F_1 into Almora Thrust	Kedar Thrust
3. Folding of the Almora Thrust (F_2)	Chaukhutia anticline
4. -	Faulting of the Chaukhutia anticline
5. N-S to NE-SW flexures (F_3)	NE-SW flexures
6. Transverse faults	E-W and NE-SW faults

On the basis of this study, following ages could be assigned to the rocks of the area:

Karchuli Group	Schists, gneisses and quartzites	Precambrian
-----Almora Thrust		
Chaukhutia- Manwa Devi Group	Quartzites	Nagthat or ?
	Chlorite schists (spilites etc.)	Lower part of Krol Group
	---unconformity---	
	Dolomitic limestone Slates and quartzites	Deoban

MAIN CONCLUSIONS AND THEIR REGIONAL SIGNIFICANCE

The main conclusions arrived at by the author, could be listed as under:

1. The dislocation along the Khastari Gadhera (referred to as North Almora Thrust by previous workers) is not the south dipping flank of the Almora Thrust. It is, instead, a big reverse fault, truncating the crest of an anticline, in such a manner that the northeastern portion has been pushed over the southwestern portion.
2. The rocks occupying the area between the thrust immediately to the east of the reverse fault, are sheared gneisses and not 'porphyries'.

3. An unconformity exists above the dolomitic limestones. The overlying chlorite schists are of spilitic nature, while the so called quartzites that come above have been found to be in part subgraywackes with lenses and layers of foliated spilitic rocks.

There is a strong possibility that sequence of the Chaukhutia area, is identical to a similar sequence recorded by O.K. Shah (1974) in the Bhowali-Bhimtal area further south. O.K. Shah (1974) has further suggested that the spilitic rocks may belong to the lower portion of the Krol Group. If this postulation is valid, then the unconformity in the study area separates the underlying Deoban from the overlying Krol.