LITHOSTRATIGRAPHY OF THE MATANOMADH FORMATION, KUTCH, INDIA

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ABSTRACT

The Matanomadh Formation is the lowermost lithostratigraphic unit of the Tertiary succession of Kutch. The lithostratigraphy of this formation has been discussed in this paper. The formation is divisible into two members, viz., (i) Laterite Member and (ii) Clastic Member. Such a division is purely based on lithology. The Laterite Member conformably overlies the Deccan Trap Formation and is mainly made up of pink, grey and variegated laterites and white kaolinitic clay. This member is unconformably overlain by the Clastic Member. The Clastic Member, on the other hand, consists of sandstones alternated by shales, mottled clay, tuff etc. The upper contact of the Clastic Member with the overlying Naredi Formation is conformable.

INTRODUCTION

THE term 'Matanomadh Formation' was instituted by Biswas and Raju (1971, 1973) after its type area Matanomadh (23°32'30"N:68°57'10"E). The formation represents the basal lithostratigraphic unit of the Tertiary sequence of Kutch.

Little work has so far been done on this formation. Wynne (1872), for the first time, recognized its stratigraphic identity. He named it as Subnummulitic Group because it underlies a rock sequence containing *Nummulites* and other foraminifers. Wynne (*l.c.*) assigned a Lower Eocene age to the Subnummulitic Group. The Lower Eocene dating for this unit was supported by Tewari (1952, 1957), Nagappa (1959) and Poddar (1959, 1963).

Biswas (1965) and Biswas and Deshpande (1970) introduced a chronostratigraphic classification of the Tertiary rocks of Kutch. They proposed the name 'Madh Series' for the lower-most chronostratigraphic unit of Tertiary rocks of Kutch. The Madh Series is thus equivalent to the Matanomadh Formation.

The lithostratigraphy of this formation is discussed here in detail.

LITHOSTRATIGRAPHY

The Matanomadh Formation is characterized by laterites and white kaolinitic clay in the lower part and varieties of sandstones alternated by carbonaceous and tuffaceous shales, mottled variegated clays, tuff, ash and laterite etc. in the upper part. The material forming the bulk of this formation is mainly derived from traps and therefore presents a varied and colourful lithology. This formation is thus easily distinguishable from other rock formations in the field. The lithological characteristics suggest that this formation is divisible into two members, viz. (i) Laterite Member and (ii) Clastic Member. The systematic description of these two members in accordance with the rules laid down in the Code of Stratigraphic nomenclature of India (1971) is given below:

Laterite Member

This member constitutes the lower part of the Matanomadh Formation and is made up of white-mottled kaolinitic clay in its lower part and pink, grey, pale-red and variegated bauxitic laterite in the upperpart. This member conformably overlies the Deccan Traps. The nature of their contact with the traps is suggestive of the alteration of basaltic flows as well as of the pyroclastics ejected during the later phase of Deccan Trap vulcanicity. On its upper limit, this member is unconformably overlain by Clastic Member. Both these contacts are exposed in the type area. The thickness of this member is 5-11 metres.

Clastic Member

This member is constituted by ferruginous and gritty sandstones, tuffaceous and carbonaceous shales, alum shales, bentonitic and ferruginous clays, volcanic ash, tuff

TABLE 1

FORMATION	MEMBER
Naredi Formation	Assilina Limestone Member Gypseous Shale Member
Matanomadh Formation	Clastic Member
	.....Unconformity.....
	Laterite Member
Deccan Trap Formation	
	.....Unconformity.....
Bhuj Formation	

and lignitic shales and a mixture of two or more of these rock types. The lower contact of this member with the underlying Laterite Member is unconformable. The top of this member is marked by a red, ferruginous sandstone which is conformably overlain by the Gypseous Shale Member of the Naredi Formation. The thickness of this member ranges between 30 and 40 metres.

The general stratigraphic sequence in the Matanomadh area, the type area for Matanomadh Formation, is given in Table 1.

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