
Permian-Triassic boundary in the Peninsula

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ABSTRACT

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The boundary between the Permian and Triassic systems is still a matter of controversy. The traditional view is that the base of the *Otoceras* beds marks the base of the Triassic and hence the top of the Permian. Though the basal Triassic is known, the topmost marine Permian is still to be recorded; this gap is not even represented by the non-marine sequence of rocks either in extra-peninsular India or in Salt Range, Pakistan.

In peninsular India, there is an undoubted non-marine (continuous) succession of Upper Permian and Lower Triassic age and no marine beds or intercalations are known. Similarly, from the extra-peninsular India, no terrestrial elements are known from the Upper Permian and Lower Triassic. Hence, the equivalence of the non-marine biozone to that of the marine is not known; only broad generalizations can be made.

The biota known from the non-marine Gondwana Sequence of Upper Permian and Lower Triassic are plants (mega as well as miofloral elements), vertebrates and invertebrates, which include estheriids, insects and anthracosids. The vertebrates and invertebrates are known from the Upper Permian but are so few in number, that these can not be taken for discussion on Permian-Triassic boundary problems.

On reviewing the biota in the various peninsular basins, the Damodar Basin is considered significant for the problem of Permian and Triassic boundary. In the Raniganj Coalfield five sections, namely, Tatulakh, Machkunda Jhor, Banspatelli, Nunia Nala and Nunia Khal have been studied extensively.

Summarizing, following points are worth notice:

1. There was a peak development of the *Glossopteris* Flora in the upper part of the Raniganj Formation. Normally, the peak development takes place just before the extinction. The complete extinction does not rule out the lingering of older forms.

2. The appearance of *Lepidopteris* and the small forms of *Dicroidium* is noted in the basal Panchet.

3. *Glossopteris* though became extinct at the lower altitudes has probably withdrawn to the higher altitudes, the climatic conditions of which was more akin the lower level. *Dicroidium* also was thriving simultaneously at higher altitudes at that time.

4. Higher up in the sequence but in the lower altitudes, *Lystrosaurus* and *Estheriella* appear.

5. The miofloral zonation with respect to Raniganj and Panchet formations particularly with respect to *Lystrosaurus* Zone, *Estheriella* Zone and *Lepidopteris* Zone are to be noted.

In the light of all above considerations, the problem of Permian and Triassic boundary is being reviewed.

Key-words—*Otoceras*, *Glossopteris* Flora, *Dicroidium*, Permian-Triassic boundary.

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