CHAPTER - VII

CONCLUDING REMARKS
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In Peninsular India the time of deposition of the Raniganj Formation and its equivalents is the zenith of Glossopteris flora. The leaf genus Glossopteris associated with Vertebrazia and a variety of fructifications is the characteristic of this flora. Trizygia, Schizoneura, Raniganjia, Neomariopteris, Dichotomopteris, Dizeugotheca, Macrotaeniopteris and Rhipidopsis are commonly occurring elements. On the basis of the floral and faunal evidences the Raniganj formation has been dated as Upper Permian (Lele, 1976; Ghosh et al., 1988 and Satsangi, 1988). The megafloral assemblage of the Lower Panchet Formation (Maitur Member) is also characterised by the preponderance of Glossopteris in association with Trizygia, Schizoneura, Neomariopteris and Dichotomopteris. Even the species of these genera are common to both Ranigaj and Panchet formations. However, in Panchets number of species is much less than that of the underlying Raniganj Formation. Moreover, in Panchets Lepidopteris and Dicroidium - type of fronds, though extremely rare, are present and plant megafossils are relatively scarce in Panchets than the underlying Raniganj Formation. Thus the majority of the species of Raniganj Formation disappeared within the upper limit of Raniganj Formation and some of the species continue in the Panchet with the introduction of some new elements viz., Lepidopteris and Dicroidium. Dicroidium is a characteristic element of Southern-Triassic floras. According to Vijaya and Tiwari (1987) the sudden decline of Densipollenites and Gondisporites near the top of
Raniganj Formation heralds the close of Permian and the appearance of Densoisporites, Lundbladispora and Lunatisporites at the base of Panchet Formation indicates the onset of the Triassic. The conchostracan faunal remains from the top of Raniganj Formation indicate Upper Permian age and those from the basal Panchets are of early Triassic aspects (Ghosh et al., 1988). Thus on the basis of available evidences the Permo-Triassic transition in the Raniganj Coalfield can be equated with the Raniganj-Panchet transition. In the Talcher Coalfield Lepidopteris and Dicroidium type of elements first appear in the Sarimunda Hill beds and these genera are totally absent in the underlying Hinjrida Ghati beds. Both Hinjrida Ghati and Sarimunda Hill localities belong to the lower beds of the Upper Member of Kamthi Formation. Thus it appears that the Permo-Triassic boundary in the Talcher Coalfield lies somewhere between the Hinjrida Ghati beds and Sarimunda Hill beds in the Upper Member of the Kamthi formation.

 Majority of the plant species that are met with in the early Lower Triassic had their maximum development during the Upper Permian. Number of species of Glossopteris falls markedly from Permian to the early Lower Triassic. Thus a floral change is evident at the onset of the Triassic. Glossopterids were the chief constituent of the Permian vegetation which were adapted to a moist warm temperate climate (Chandra and Chandra, 1988). Sharp reduction of the member of Glossopteris species indicates a change in the climatic set up. The bulk of Upper Permian elements became extinct and only a few hold-overs could thrive in the early Lower
Triassic which had an obvious tolerance to climate adversity. The scarcity of plant fossils in most of the Lower Triassic localities reflects deterioration of the overall vegetation. During the early Triassic some distinct plants (*Lepidopteris, Dicroidium*) began to appear, they had pinnate organisation, thick cuticle and often overhanging papillae around the stomatal pits which are indicative of a relatively dry climate. Plant megafossils from the late Lower Triassic of Penninsular India are not yet known. However, the miospore and megaspore assemblages recovered from the Deoli Member of Panchet Formation (late Lower Triassic) reflects further extinction of Upper Permian hold-overs and appearance of new groups of plants. At any rate a change in the vegetational scenario in Peninsular India is evident at the beginning of the Triassic which signifies a change in the climatic set up: perhaps involving low humidity. A cool and medium to low humid climate has also been envisaged for the Peninsular Indian early Triassic by Tiwari and Tripathi (1988) based on palynological data.