

ABSTRACTS

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laminated, non-coking with 3% to 5% moisture, 40% to 50% ash and 0.4% to 0.8% sulphur. This Lower Kamthi unit is characterised by the dominance of striate-disaccate pollen homotaxial with Raniganj Formation of Damodar Basin and indicating Late Permian age. Disposition and characteristics of this coal-bearing zone, which show remarkable depth persistency from near the surface to over 800 m depth, indicating formation of well-drained peat swamps during the Late Permian age periodically suffocated by influx of clastic detritus.

**EPIFAUNAL - INFAUNAL PELECYPOD DIVERSITY PATTERNS ACROSS
THE UPPER PALEOZOIC TRANSGRESSIVE-REGRESSIVE CYCLE,
PARANA BASIN, BRAZIL**

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Late Paleozoic marine benthic invertebrate assemblages in the Parana Basin of Brazil (Tubarao and Passa Dois Groups, Late Carboniferous-Late Permian) are dominated by pelecypods with subordinate brachiopods and gastropods. Other invertebrates (crustaceans, echinoderms, arenaceous forams) are rare. Assemblages occur in autochthonous to allochthonous concentrations that reflect differing time-averaged groupings.

Assemblages evolved in an epicontinental sea covering the Parana Basin with a complex geological history involving glacial (terrestrial-glacial marine), fluvial-deltaic and marine deposition, associated with a great transgressive-regressive cycle. Environmental changes included a climatic warming towards the end of the Permian and important fluctuations in salinity, oxygen content and sedimentation rate.

Benthic faunas from the transgressive phase (Tubarao Group) differ markedly from those of the regressive phase (Passa Dois Group) in composition, diversity, predominant life habit and trophic structure. The former are more diversified with relatively high proportion of epifaunal (mainly pectinids) filter-feeding forms together with elements of the filter-feeding, byssate semi-infauna and shallow infauna. Locally, in low oxygen and organic-rich environments, little diversified faunas mostly of infaunal shallow-burrowing, detritivorous taxa dominate. The transgressive phase seems to have favoured migration of cosmopolitan genera (middle part of the Itarare Subgroup) and of widely distributed Gondwanic taxa (upper part of the Itarare Subgroup; Rio Bonito and Palermo Formations) into the Parana Basin. These assemblages are mostly composed of semi-infaunal shallow-burrowing, filter-feeding, and semi-infaunal byssate elements, but epifaunal filter-feeding shells may locally form large populations. It seems that improved environmental conditions during the transgressive phase facilitated the development of epifaunal taxa, normally more sensitive (stenoeious) to variations in the habitat. An opposite pattern is shown by assemblages of the regressive phase (Passa Dois Group), which is characterized by high environmental stress, adaptative intrabasinally.