A B S T R A C T

ASPECTS OF THE SEDIMENTOLOGY OF LATE CRETACEOUS TO EARLY TERTIARY CLASTIC SEDIMENTS, RIO GRANDE VALLEY, NORTH EAST, JAMAICA.

Over 1600 metres of later Cretaceous to early Paleocene sediments are exposed in the Rio Grande Valley, north east Jamaica, where stream sections across the strike have permitted mapping of vertical sequences. The sediments are predominantly clastic, containing sandstones, shales and minor conglomerates. Only a few beds near the base of the sequence contain a significant quantity of shelf-derived carbonate debris.

Six facies, associated with deposition in a submarine fan environment, have been identified on the basis of sand/shale ratios, bed thickness, primary sedimentary structures and vertical succession. They include proximal and distal outer fan "classic" turbidities; mid-fan depositional lobes, levees and channel fill facies, and an inner-fan feeder-channel facies. The sequence records an overall thickening and coarsening upwards trend, suggesting fan progradation.

The volcanic litharenites providing the basin fill are mainly of andesitic origin. This origin is suggested by Fp/F ratios between 0.61 and 0.91 and small to negligible amounts of quartz. High feldspar content also indicates that these sediments are first cycle and chemical immaturity coupled with textural immaturity suggest that detritus was only transported over relatively short distances.

High rates of sedimentation, amalgamated sandstone sequences, sediment immaturity and the fan prograde point to rapid basin filling close to the sediment source which based on lateral facies variation and provenance was located to the southwest. Sedimentation was controlled by rapid tectonic emergence of the adjacent source terrain, following the break up of a Cretaceous island arc complex. These factors contributed to a complex hybrid radial fan - slope apron system.

Suggestions are, that this basin may represent either a forearc, or interarc basin with the Bellevue and Brownsfield volcanic formations as volcanic arc basement rocks.