

# Trace Fossils and Depositional Environments of the Haman Formation in Changsun Island, Kyongsangnamdo, Korea.

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## Abstract

The sedimentary facies of the Cretaceous Haman Formation of Changsun Island, Kyongsangnamdo are classified into seven sedimentary facies; F1: Purple shale and sandstone facies, F2: Pebbly coarse sandstone facies, F3: Green mudstone and sandstone facies, F4: Interlaminated to thinly interbedded sandstone to siltstone/shale facies, F5: Planar-to cross-laminated sandstone to siltstone facies, F6: Irregularly bedded coarse sandstone to shale facies, F7: Thin to medium bedded and graded sandstone facies. F1 to F3 represent fluvial plain and the rest of the sedimentary facies are interpreted as marginal lake environments.

Various and abundant trace fossils are described herein as *Beaconites coronus*, *Cochlichuns anguineus*, *Cochlichnus* sp., *Dendrotichnium* sp., *Diplocraterion parallelum*, *Helminthopsis abeli*, *Helminthopsis hieroglyphica*, *Palaeophycus tabularis*, *Planolites beverleyensis*, *Planolites montanus*, *Paleodictyon majus*, *Skolithos magnus*, and *Skolithos* sp. In addition, bird tracks found are described as *Uhangrichnus changsun* sp. nov. Its lengths are up to 53 mm (hallux included) and widths are 46 mm in average. It is characterized by its reduced web with distinct concave margin, prominent hallux impression directed towards digit II and the asymmetry of footprint in which the interdigital angle between digit II and III is about 1.25 times wider than that of between digit III and IV.

In fluvial plain deposits *Beaconites coronus*, *Planolites beverleyensis*, *Planolites montanus* are dominant and *Skolithos* sp. is also contained. These ichnofaunas are analogous to *Scoyenia* ichnofacies. In lake margin deposits *Cochlichnus* sp., *Diplocraterion parallelum*, *Helminthopsis abeli*, *Helminthopsis hieroglyphica* are dominant and *Dendrotichnium* sp., *Paleodictyon majus* and *Skolithos magnus* also are contained. These ichnofaunas are analogous to *Mermia* ichnofacies.