Abstract

To the east Hidalgo State, Mexico, the Tenango de Doria County is the main Mountain Valley with outcrops of the Huayacocotla Formation (Upper Sinemurian). A new outcrop with great abundance of ammonoids and bivalves is here reported. Specimens were identified to the generic and specific level, including analysis of their functional morphology, hábitat spectra, index of relative abundance and measures, with emphasis on paleoecological inferences. Sedimentary petrology was also described. Species found in this outcrop include: Paltechioceras tardecrecens, P. rothpletzi, P. burckhardti, P. harbledownense, Paltechioceras sp, Orthechioceras jamesdanae, O. incaguasiense, O. pauper, Plesechioceras cihuacoatle, Arnioceras ceratitoides, aff Metophioceras sp., Neocrassina sp, Plagiostoma sp, Bositra sp, ?Parainoceramus sp, Posodonotis semiplicata, one species of Cryptodonta and 3 species not identified. Neocrassina and an unnamed species represent infaunal elements and suggest existence of soft bottom sea. The environmental preference analysis is based on morpho-functional information from fossil material, and suggests the main facies to correspond to inner and proximal platform. The faunal composition of the outcrop was broadly dominated by ammonoids. This observation is reinforced by diversity index. These proxys and the index hábitat with the measured structure are indicative for a median neritic platform too. The fossil assemblages include some characteristics that recall Jurassic communities previously described, however it possibly represent a new type of Jurassic community. Posodonotis semiplicata is consistent with low oxygen bottom waters, interpretation reinforced by presence of pyrite nodules. The taphonomic evidence of the outcrop reveals the low energy distal neritic platform, alternated with sedimentary soft flows from proximal neritic and medial platform.

Keywords

Sinemurian, ammonites, bivalves, Huayacocotla, paleoenvironment