

ABSTRACT

A karst surface containing numerous solution pits occurs on the top of the Clayton Formation limestone (lower Paleocene) in the proximity of Fort Gaines, Georgia (USA). Previous workers have interpreted this karst surface as having developed in a subaerial paleosetting which was subsequently buried by transgressive deposits. However, our examination of numerous carbonate outcrops along the Chattahoochee River and Town Creek suggests an alternative explanation. Apparently, the karstic surface and its associated pits and cavities resulted from the decomposition of overlying organic-rich sediments (i.e., the Gravel Creek Sand Member of the Nanafalia Formation - middle Paleocene) coupled with the downward expulsion of acidic connate fluids. Deepest dissolution appears to occur preferentially as pits and cavities within the limestone along joints likely developed in association with the regional uplift of southwestern Georgia during the Lower Paleogene. Subaqueous karst development ended with the cessation of acid production from the decomposing organics within the compacting Gravel Creek Sand Member.