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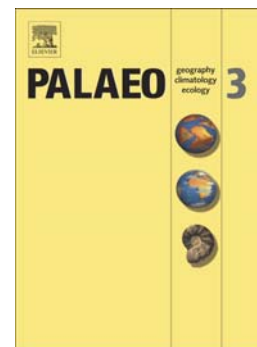
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Microbial proliferation coinciding with volcanism during the Permian– Triassic transition: new, direct evidence from volcanic ashes, South China

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Abstract

Coupling with major biotic extinction, both widespread microbially mediated deposits and ash beds characterize the Permian– Triassic boundary (PTB) successions worldwide. Thus, active volcanism through the PTB interval has been proposed to account for contemporary microbial bloom. Direct evidence, however, has long been scarce. Here we present several lines of evidence for microbial proliferation in the PTB ashes from South China. Petrographic analysis reveals annular, granular and tubular bioalteration textures that formed during microbial dissolution of glass and subsequent precipitation. Annular textures appear as fresh glass shards connected with bands in different thicknesses, showing rough and sharp interfaces, and are bordered with fibrous textures. Granular textures are composed of clusters of near-spherical bodies, ranging in size from 0.05 to 2 μm . Tubular textures occur as straight, curved

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