

The Triassic-Jurassic Transition Across the Nova Scotian - Moroccan Conjugate Margins

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Latest Triassic and earliest Jurassic strata of the exposed Fundy (Nova Scotia) and Moroccan record the end-Triassic extinction (ETE) and the plausibly causally related eruptions of the Central Atlantic Magmatic Province (CAMP). Outcrops of strata just below CAMP lavas in all of the basins comprise distinctive thin-bedded layers of black, gray, red, and white mudstone and carbonate with halite pseudomorphs and salt-dissolution features. Most layers, even red ones, contain organic matter (in places >4%). In the Berrechid and Khémisset basins in Morocco, the variegated beds pass at depth into bedded black, red, and white halite and potash. In the Fundy basin, lacustrine carbonates and mudstones extend basin-wide over the North Mt. Basalt, while in the Morocco the CAMP is interbedded with lacustrine carbonates in the west, with fossils identical to Nova Scotia (1), and marginal to fully marine carbonates in the east with diverse marine bivalve, gastropod, and echinoid assemblages. Fundy sporomorphs indicate a floral extinction event occurred just prior to the eruption of the basal CAMP(2), associated with locally abundant ferns and ferns spores, despite the evaporites. This floral extinction event, previously identified as the Triassic-Jurassic boundary as well as the North Mt. basalt are within ~100 ky of the initial marine ETE(3). However, the new GSSP for the base Jurassic is now defined by the FAD of the ammonite *P. spelae*(4), well above the ETE. Sporomorphs from just above the North Mt. Basalt show that the ETE continued well into the time of the CAMP(5), and because the ETE itself has yet to be found below the CAMP in Morocco(6) it is plausible eruptions were synchronous with its initiation. Likewise, marine interbeds within CAMP of eastern Morocco correlate with the "pre-planorbis zone", and are pre-Jurassic. Therefore, CAMP eruptions were synchronous with the ETE and could have caused it, and were associated with accelerated subsidence and a transgression of marine waters and distal brines. Thus some of the most important biotic and depositional features of the Nova Scotian - Moroccan conjugate margins directly relate to the CAMP. 1) Whiteside et al. 2007. *PPP*, 244:345; 2) Fowell & Traverse 1994. *Rev. Palaeobot. Palynol.* 86:211; 3) Schaltegger et al. 2008. *Earth Planet. Sci Lett.* 267:266; 4) Morton et al. 2008. *Internat. Subcom. Jur. Strat. Newslett.* 35:68; 5) Cirrelli et al. 2009. *PPP*, in press; 6) Marzoli et al. 2004. *Geology* 32:973.