

## The Weissert Oceanic Anoxic Event (Valanginian), in the Caribbean, Sierra de los Órganos, Western Cuba.

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The Cretaceous sedimentary record shows intermittent organic-rich intervals characteristic of severe oxygen depletion in the ocean known as oceanic anoxic events (OAEs). These deposits, which generated large amounts of hydrocarbons indicative of significant changes in the global carbon cycle [1-2], have been recorded in the Americas, but not in the Caribbean.

We present a preliminary high-resolution chemostratigraphic and biostratigraphic assessment of lowermost Cretaceous dark hemipelagic limestones from Sierra de los Órganos, Pinar del Río, Western Cuba. This succession accumulated along the passive margin of the Maya Block during the middle Mesozoic expansion of the Proto-Caribbean seaway and is part of the Guaniguanico Terrain [3 - 4].

The lowermost 4m interval of a 30-m quarry outcrop near Pons, on the eastern terminus of the Pan de Azúcar [4], includes thin grayish black (N2) chert-bearing carbonaceous marlstones (TIC: 44.7 – 77.3%; TOC: 3.5 – 10.82%) intercalated with medium dark gray (N5) limestones (TIC > 90%; TOC: average 2.3%). Thin sections and electron microscopy imaging (SEM-EDS) reveal isotropic fabric throughout with a bioturbation index BI>3 [5] in the lighter micritic limestone and BI<2 in the carbonaceous layers, including few single framboids, bundles of cubic pyrite. The carbon isotopic ( $\delta^{13}\text{C}_{\text{org}}$ ) profile averages ~ 27.3 ‰ with a peak up to ~ 25.56 ‰ (~1.7‰ excursion) concurs with the late Valanginian nannofossil subzone NK3B, based on the presence of *Calcicalathina oblongata* and the disappearance of *Rucinolithus wisei*. Occurrence of calpionellids *Tintinopsella* cf. *carpathica* and *Calpionellites* cf. *darderi* support the correlation up to earliest Hauterivian [6,7,8].

The results thus provide the first contribution to the widespread oxygen deficient conditions associated with the Weissert event occurring in the Caribbean Basin.

[1] Weissert et al (1979) *Ocean. Geol.* **7**, 147-151. [2] Weissert (1989) *Surv. Geophys.* **10**, 1–61. [3] Pszczółkowski (1978) *Acta Geologica Polonica* **28** (1), 1-96. [4]. Pszczółkowski et al (2013) X Congreso Cubana Geología. ISSN 2307-499X. [5] Taylor & Goldring (1993) *Geol. Soc. Lond.* **150**, 141–148. [6] Pszczółkowski (1999b) *Studia Geologica Polonica* **114**, 7-33. [7] Mutterlose et al (2021) *Episodes*, **44** (2), 129–150. [8] Giraldo-Gómez et al (2022) *Palaeo3* **587**, 110795.