

Supplementary material: "Carbonífero de Puertollano" Natural Monument (Puertollano basin, Spain): a window for the knowledge of Early Vertebrates

Material Suplementario: Monumento Natural "Carbonífero de Puertollano" (cuenca de Puertollano, España): una ventana al conocimiento de Vertebrados Inferiores

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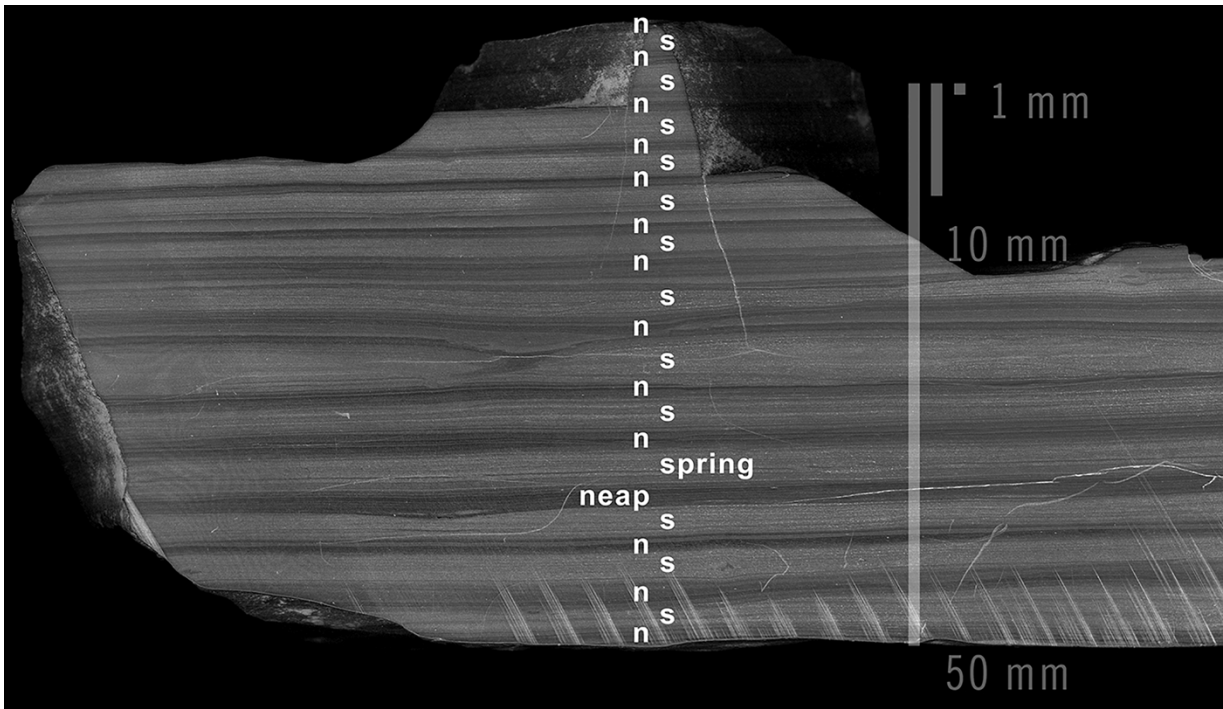
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Supplementary Figure 1. Sample of mudstone (María Isabel opencast mine) showing tidal rhythmy (cf. Soler-Gijón & López-Martínez, 2008). Compare with Carboniferous tidalites and Recent examples in Feldman *et al.* (1993, figs. 4, 8), Cunningham *et al.* (1993, fig. 5) and Tessier (1993, figs. 4, 6).



Supplementary Figure 2. Stratigraphical section exposed at María Isabel opencast mine.



Dark grey colour mudstone with coprolites (probably from xenacanth sharks) and “bone beds” in very continuous sidente layers (BED 7).

Thin coal layer high in sulphur. Badly preserved vertebrate remains occur (BED 6).

Grey mudstone rich in clay with numerous possible elongated root remains which can continue until the sandstone layer below (BED 6).

Light grey sandstone with cross stratification and possible evidence of roots. At the top, a 10 cm thick sandstone layer is located showing a surface with interference ripples (BED 6).

Light grey siltstone with intercalations of discordant sandstone layers (BED 6).

Sandstones with cross stratification and erosive contact with the layers below (BED 6).

Supplementary Figure 3. Detail of section shown in Suppl. Fig. 2, with the description of the main sedimentological and paleontological features. Data from the field campaign of September 2021, supported by the regional government of Castilla-La Mancha.



Supplementary Figure 4. Detail of layer with interference ripples, indicating the lowering of the water level (see discussion in Davies & Shillito, 2021).



Dark laminated mudstones with numerous coprolites (probably from xenacanth sharks) and intercalations of siderite layers, often with “bone beds”.

Grey mudstone finely laminated with plant remains and two thin coal layers. At the top, the mudstone gradually changes to siltstone.

Light grey sandstone with cross stratification and more nodular at the top.

Supplementary Figure 5. Detail of stratigraphical section exposed in the south part of La Extranjera opencast mine, with the main sedimentological and paleontological features. Data from the field campaign of September 2021, supported by the regional government of Castilla-La Mancha.



Supplementary Figure 6. Area of wave ripples few meters below the thin coal layers, La Extranjera opencast mine. **A**, general view; **B**, detail of wave ripples exhibiting concave eroded crests and laminated sandstone at the top of the ripples, both features suggesting an inter-supratidal location.



Supplementary Figure 7. Detail of the stratigraphical section exposed at La Tejera quarry. Note the siltstone layer intercalated in between the large sigmoidal sandstone bodies (right side of the picture).

SUPPLEMENTARY REFERENCES

- Cunningham, C. R., Feldman, H. R., Franseen, E. K., Gastaldo, R. A., Mapes, G., Maples, C. G., & Schultze, H.-P. (1993). The Upper Carboniferous Hamilton Fossil-Lagerstätte in Kansas: a valley-fill, tidally influenced deposit. *Lethaia*, 26, 225–236. doi: 10.1111/j.1502-3931.1993.tb01524.x
- Davies, N. S., & Shillito, A. P. (2021). True substrates: The exceptional resolution and unexceptional preservation of deep time snapshots on bedding surfaces. *Sedimentology*, 68, 3307–3356. doi: 10.1111/sed.12900

- Feldman, H. R., Archer, A. W., Kvale, E. P., Cunningham, C. R., Maples, C. G., & West, R. R. (1993). A tidal model of Carboniferous Konservat-Lagerstätten Formation. *Palaios*, 8, 485–498. doi: 10.2307/3515022
- Soler-Gijón, R., & López-Martínez, N. (2008). Tidal rhythmites in Upper Carboniferous deposits from Puertollano Basin (Central Spain): palaeoenvironmental implications. In S. Stamberg, & J. Zajić (Eds.), *Faunas and palaeoenvironments of the Late Palaeozoic* (pp. 43–44). Special Publication to 5th Symposium on Permo-Carboniferous Faunas.. Hradec Králové.
- Tessier, B. (1993). Upper intertidal rhythmites in the Mont-Saint-Michel Bay (NW France): perspectives for paleoreconstruction. *Marine Geology*, 110, 355–367. doi: 10.1016/0025-3227(93)90093-B