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SUPPLEMENTARY ONLINE MATERIAL FOR

A probable oligochaete from an Early Triassic Lagerstätte of the southern Cis-Urals and its evolutionary implications

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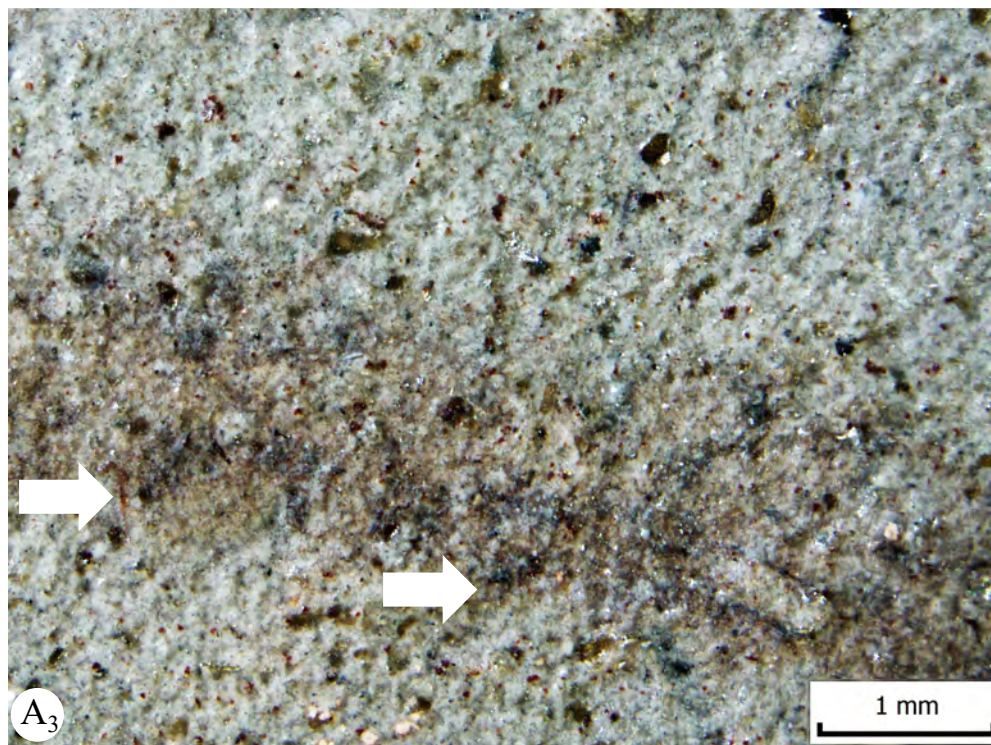
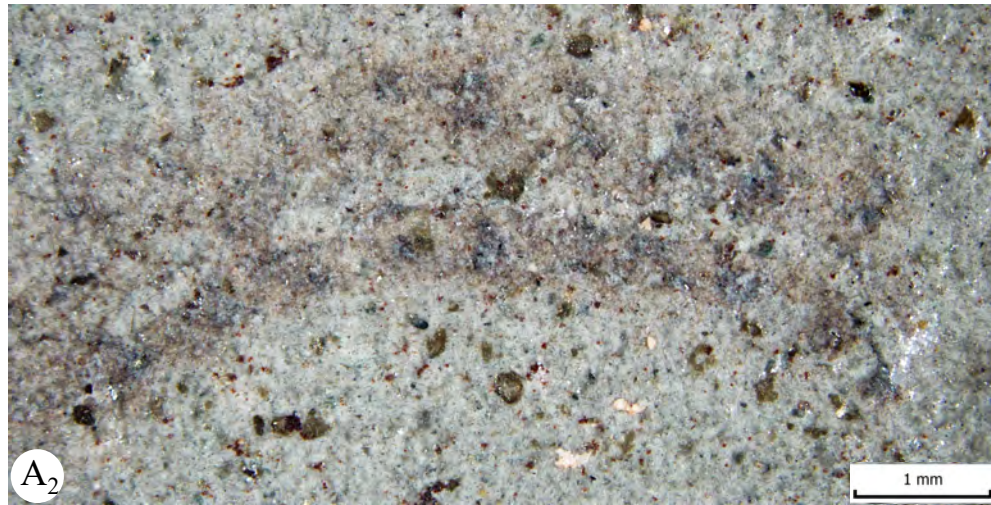
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Supplementary Online Material

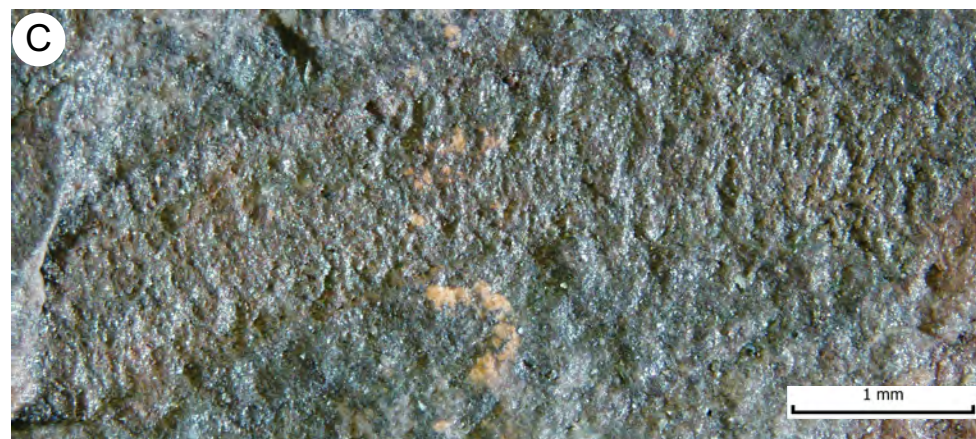
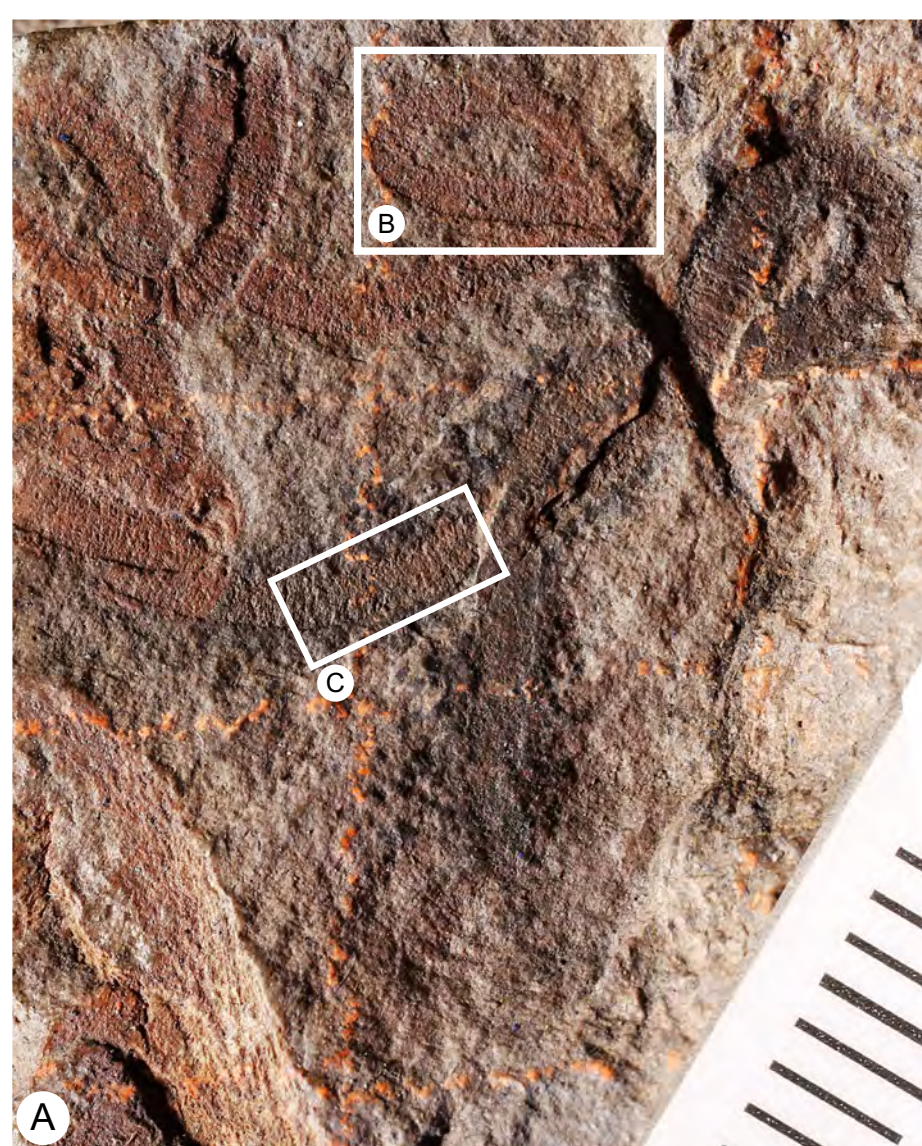
SOM 1. Figure 1. *Pronaidites carbonarius* Kušta, 1888; holotype, Me102, National Museum, Prague; Rakovník, Bohemian Massif, Czech Republic; Carboniferous, Pennsylvanian, Moscovian Stage, Radnice Formation.

SOM 1. Figure 2. *Lumbricopsis permicus* Fritsch, 1907; specimen P1391, National Museum, Prague; Bítochov, Bohemian Massif, Czech Republic; Lower Permian (Cisuralian), Sakmarian Stage, Prosečné Formation.

SOM 2. Figure 1. Petropavlovka III section, Orenburg region, Russia; Lower Triassic, Olenekian Stage, Petropavlovka Formation.
Thin sections of the fossil-bearing matrix.

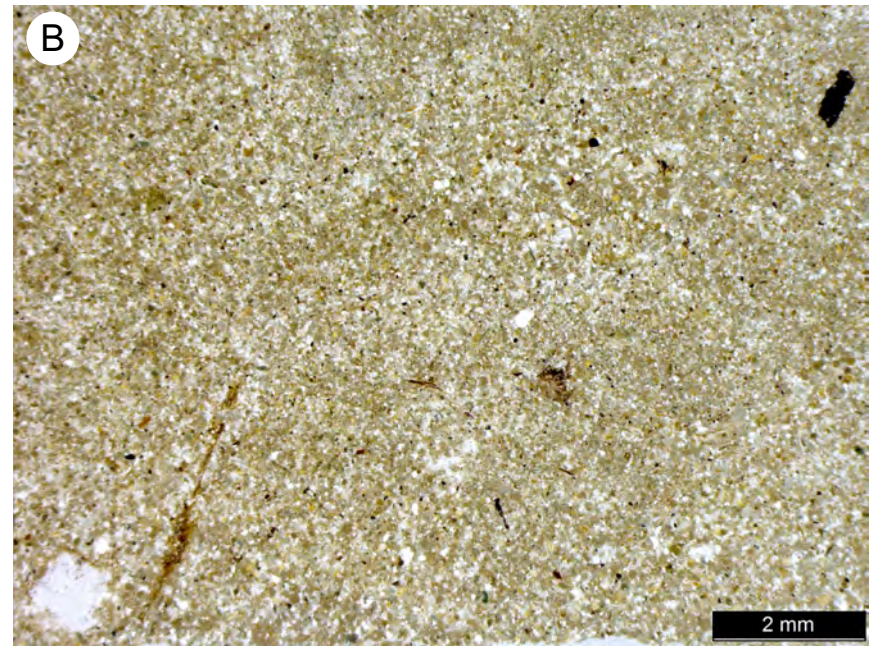
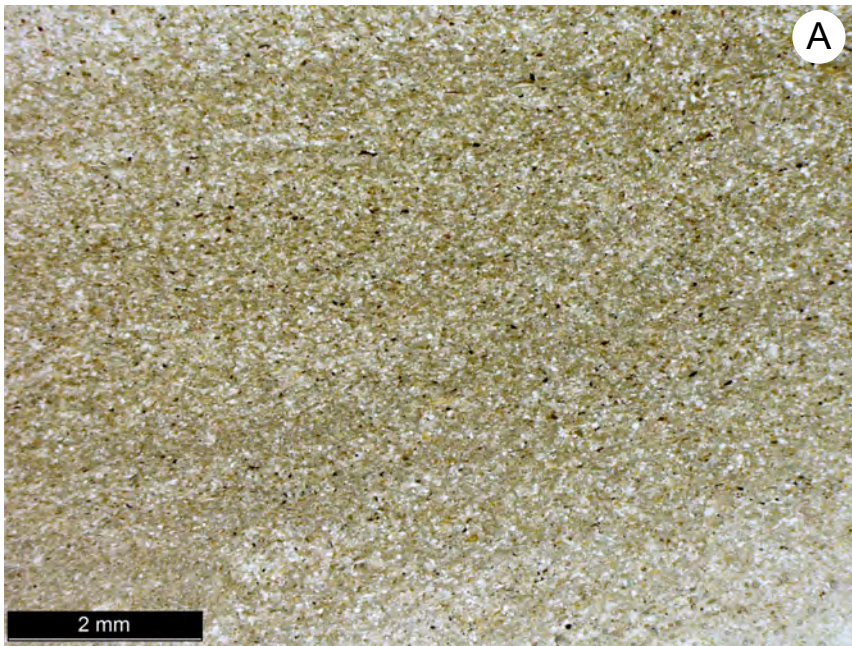


Pronaidites carbonarius Kušta, 1888; holotype, Me102, National Museum, Prague; Rakovník, Bohemian Massif, Czech Republic; Carboniferous, Pennsylvanian, Moscovian Stage, Radnice Formation. A₁, general view. A₂ and A₃, enlargements of boxed regions in A₁, arrows depict possible chaetal bundles.

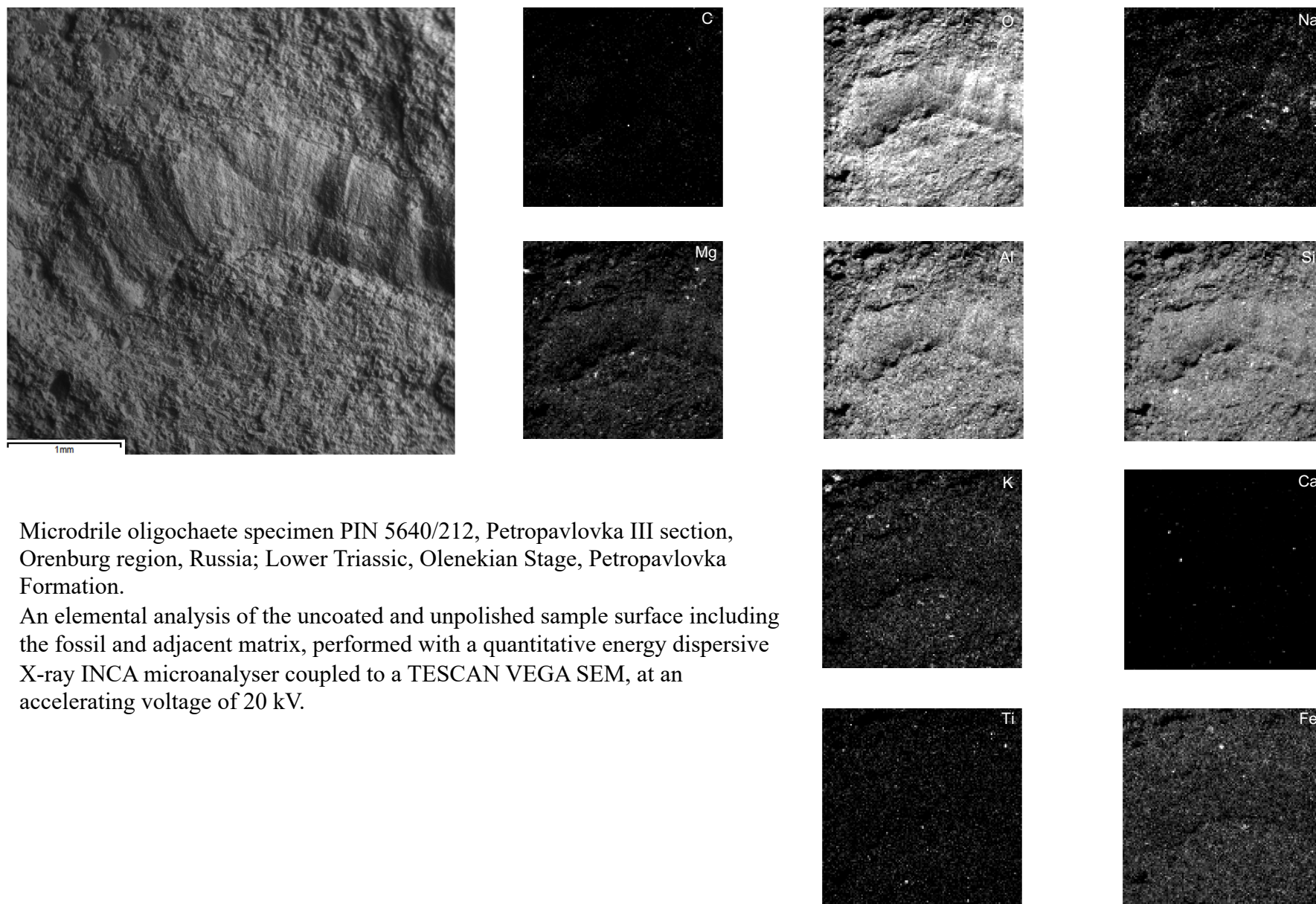


Lumbricopsis permicus Fritsch, 1907; specimen P1391, National Museum, Prague; Bítouchov, Bohemian Massif, Czech Republic; Lower Permian (Cisuralian), Sakmarian Stage, Prosečné Formation.

A, general view, water cover. B and C, enlargements of boxed regions in A.



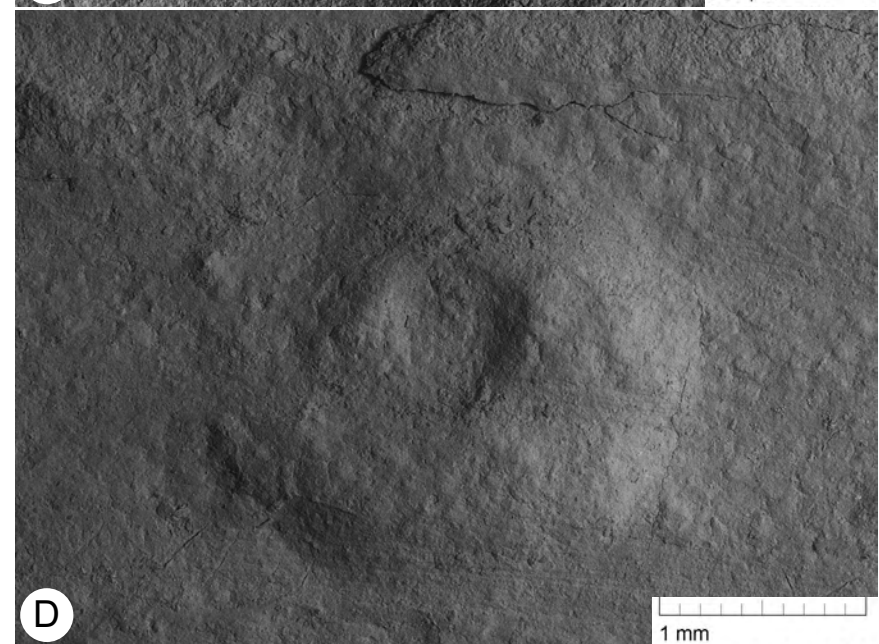
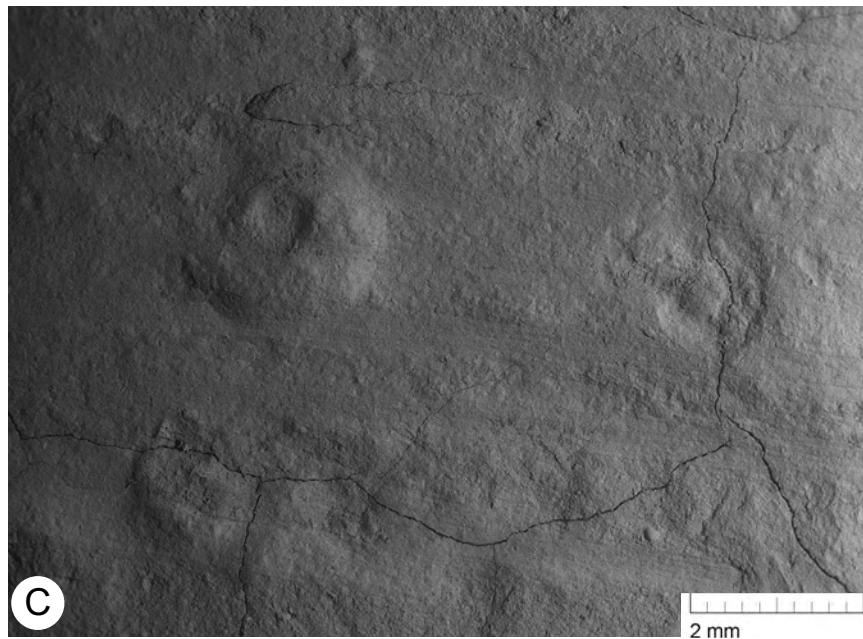
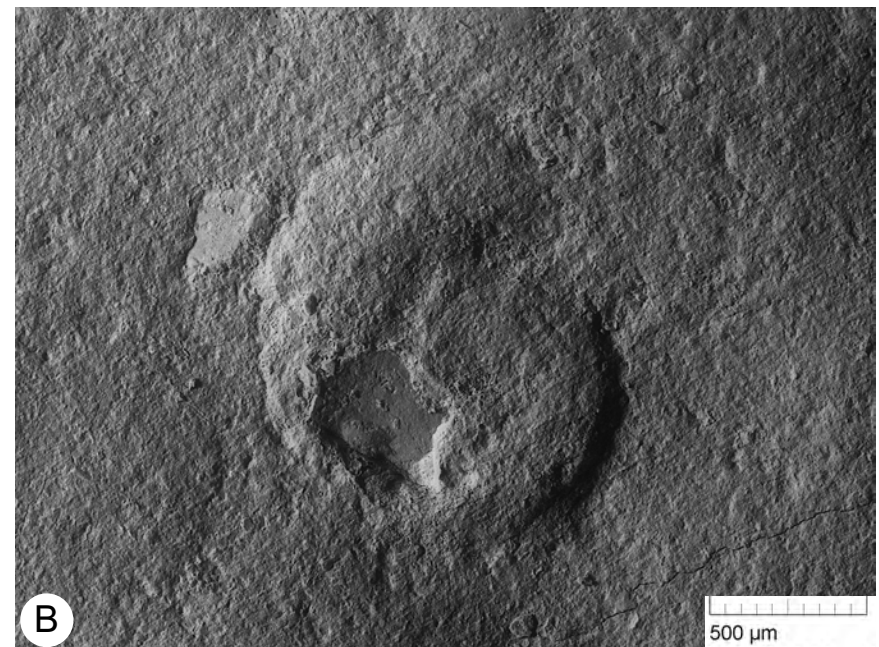
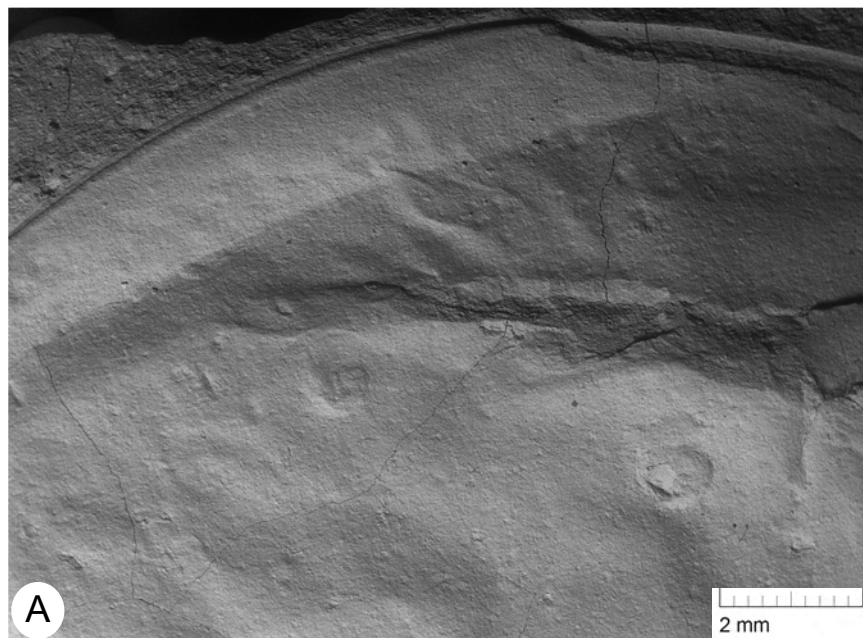
Petropavlovka III section, Orenburg region, Russia; Lower Triassic, Olenekian Stage, Petropavlovka Formation. Thin sections of the fossil-bearing matrix. A, section across the sediment thickness. B, section along the bedding plane, dark material represents plant remains, square transparent element at the bottom left – a quartz grain.



Microdrile oligochaete specimen PIN 5640/212, Petropavlovka III section, Orenburg region, Russia; Lower Triassic, Olenekian Stage, Petropavlovka Formation.

An elemental analysis of the uncoated and unpolished sample surface including the fossil and adjacent matrix, performed with a quantitative energy dispersive X-ray INCA microanalyser coupled to a TESCAN VEGA SEM, at an accelerating voltage of 20 kV.

Appendix S2. Figure 2



Appendix S2. Figure 3

Microconchid *Spirorbis*-like tentaculitoid tubeworms encrusting a horseshoe crab head shield (A–B) and terrestrial plant remains (C–D), Petropavlovka III section, Orenburg region, Russia; Lower Triassic, Olenekian Stage, Petropavlovka Formation.

Table 1. Host rock elemental composition, obtained by a wavelength dispersive X-ray fluorescence SPEKTROSKAN-MAKS-GV spectrometer using high resolution LiF(200) analysing diffraction crystal at an accelerating voltage of 40 keV, of the Lower Triassic Petropavlovka Formation from the fossil-bearing lens of Petropavlovka III locality, Orenburg region, Russia. Principal elements (mean values, %).

Element	Value (%)	Error
SiO ₂	62.6830	0.094726
Al ₂ O ₃	10.9100	0.112350
MgO	8.5871	0.295660
Fe ₂ O ₃	6.9308	0.024413
K ₂ O	1.4271	0.006851
TiO ₂	0.7780	0.004234
CaO	0.7007	0.023017
Na ₂ O	0.4121	0.227060
P ₂ O ₅	0.0894	0.003377
MnO	0.0798	0.000572
S	0.0580	0.000496
Ba	0.0286	0.001386

Table 2. Host rock elemental composition , obtained by a wavelength dispersive X-ray fluorescence SPEKTROSKAN-MAKS-GV spectrometer using high resolution LiF(200) analysing diffraction crystal at an accelerating voltage of 40 keV, of the Lower Triassic Petropavlovka Formation from the fossil-bearing lens of Petropavlovka III locality, Orenburg region, Russia.

Auxiliary elements (mean values, ppm).

Element	Value (ppm)	Error
Ni	496.780	3.1957
Cr	132.870	1.9229
Zn	103.740	2.0142
Cu	95.810	13.461
V	92.522	1.4814
Sr	75.552	2.4671
Rb	62.329	3.2629
Sn	52.780	6.5249
Pb	42.462	5.0579
As	24.199	2.4171
Co	15.265	1.2824
Sc	13.937	0.1066
Cs	8.2807	2.5484