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SUPPLEMENTARY ONLINE MATERIAL FOR

Early–middle Cambrian stratigraphy and faunas from northern Siberia

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Supplementary Online Material

SOM 1 Figure 1. Calcimicrobial thrombolite with embedded tubular fossils.
Figures 2, 3. Section 11 at the right side of the mouth of the Yuettekh Brook, right bank of the Khorbusuonka River.

SOM 2 Figure 1. Sections 21 and 22 situated on the right bank of the Lena River.
Figure 2. Section 21: upper contact of the lower dolerite sill with sandstones and upper contact of the upper dolerite sill with reddish carbonates of the Middle Member of the Tyuser Formation.
Figure 3. Section 21: upper erosional contact of the upper dolerite sill with sandstones of the basal Middle Member of the Tyuser Formation.
Figure 4. Section 21: upper erosional contact of the upper dolerite sill with sandstones of the basal Middle Member of the Tyuser Formation.

SOM 3. Occurrence of taxa in samples, available at http://app.pan.pl/SOM/app67-Kouchinsky_etal_SOM/SOM3_Occurrences.xls

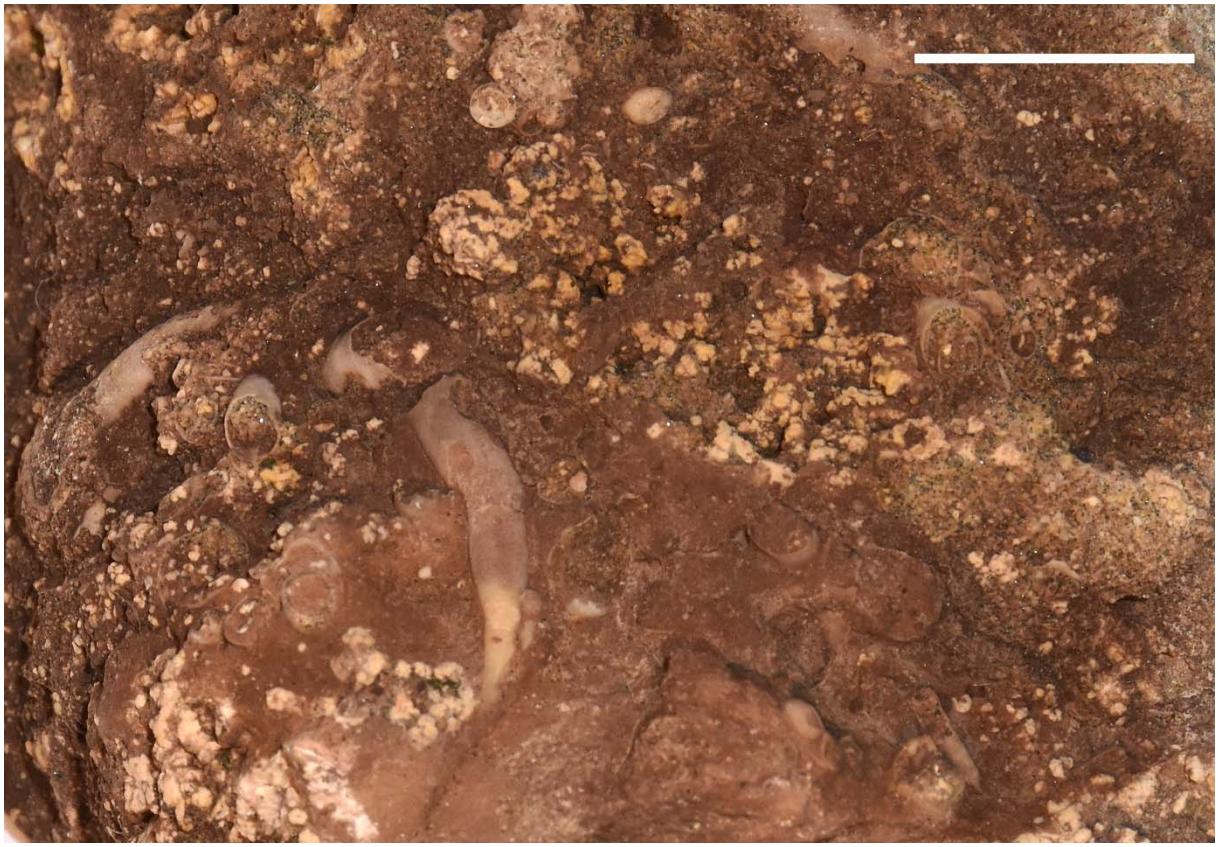
SOM 4. Results of $\delta^{13}C$ and $\delta^{18}O$ analyses from sections 96-1 and 96-2 (Malaya Kuonamka River), 96-8 (Bol'shaya Kuonamka River), 11, 15, 19, and 20 (Khorbusuonka River), 21 and 22 (Lena River) available at http://app.pan.pl/SOM/app67-Kouchinsky_etal_SOM/SOM4_Analyses.xls

SOM 5. First occurrences of eight major groups of Cambrian echinoderms in five biogeographical regions.

Supplementary Online Material

SOM 1.

SOM 1 Figure 1. Calcimicrobial thrombolite with embedded tubular fossils (probably, anabaritids *Cambrotubulus conicus*) on a weathered vertically oriented surface of the basal bed of section 11 (sample 11/0), Khorbusuonka River, lower part of Cambrian Stage 2. Scale bar–1 cm. SMNH X11350



SOM 1 Figure 2 (left). Section 11 (71°19' N, 123°59.5' E), at the right side of the mouth of the Yuettekh Brook, right bank of the Khorbusuonka River. SOM 1 Figure 3 (right). Section 11, basal bed arrowed.

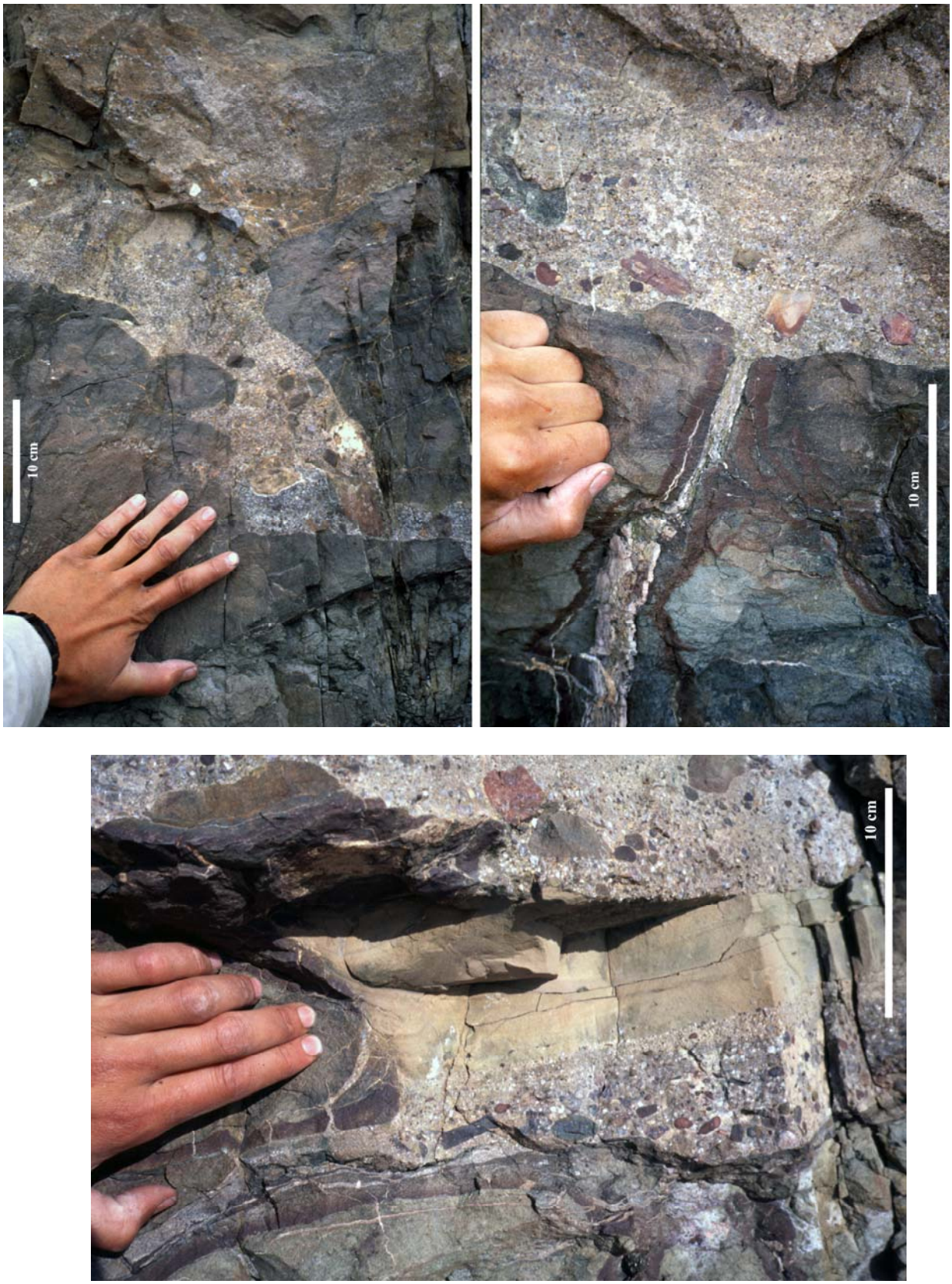
SOM 2.

SOM 2 Figure 1. Sections 21 and 22 situated on the right bank of the Lena River, 0.1-0.5 km upstream (section 21, right arrow at the beginning of the section, where dolerite sills are exposed) and at the left side (section 22, left arrow) of the mouth of the Ulakhan-Ald'yarkhay Brook.

SOM 2 Figure 2. Section 21: upper contact of the lower dolerite sill with sandstones (left) and upper contact of the upper dolerite sill with reddish carbonates of the Middle Member of the Tyuser Formation showing erosional, ca 1.5 m-high relief (right).

SOM 2 Figure 3. Section 21: upper erosional contact of the upper dolerite sill with sandstones of the basal Middle Member of the Tyuser Formation. Pillow-shaped structures and cemented fractures in the dolerite.

SOM 2 Figure 4. Section 21: upper erosional contact of the upper dolerite sill with sandstones of the basal Middle Member of the Tyuser Formation. Close-ups of caverns and fractures infilled with sandstone.



SOM 3. Occurrence of taxa in samples, available at

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Approximate number of specimens in a sample is designated by 'n' meaning 'several', i.e. between 2 and 10, n10 – several dozen, n100 – several hundred, and n1000 – several thousand.

SOM 4. Results of $\delta^{13}C$ and $\delta^{18}O$ analyses from sections 96-1 and 96-2 (Malaya Kuonamka River), 96-8 (Bol'shaya Kuonamka River), 11, 15, 19, and 20 (Khorbusuonka River), 21 and 22 (Lena River), available at http://app.pan.pl/SOM/app67-Kouchinsky_etal_SOM/SOM4_Analyses.xls

SOM 5. First occurrences of eight major groups of Cambrian echinoderms in five biogeographical regions (modified after Zamora et al. 2013). The occurrences in Siberia are updated according to the new material reported herein and after Kouchinsky et al. (2011, 2015). Groups numbered as follows (identification from disarticulated elements is marked by a '): 1- helicoplacoids; 2- eocrinoids; 3- edrioasteroids; 4- rhombiferans, 5- cinctans; 6- ctenocystoids; 7- solutes, 8- stylophorans. First occurrence of stereom (S) and holomeric columnals (C - articulated material, c - disarticulated remains).

		Laurentia	W. Gondwana	Australia	China & Korea	Siberia
Furongian	10 9 8				4, 8	
Miaolingian	7 6 5	 7, C 6, 8	 4, 5, 6, 8, Cc	 6 c	 3	2 4, 5, 6, 8, C
Series 2	4 3	2, ?7 1, 3, S	3, c? S 2	3, 2′, 3′ S 	2 S	**3′, ?4′, 6′, c** 2′, S
Terreneuvian	2 1					