

## **SUPPLEMENTARY DATA**

# **Mercury spikes as evidence of extended arc-volcanism around the Devonian-Carboniferous boundary in the South Tian Shan (southern Uzbekistan)**

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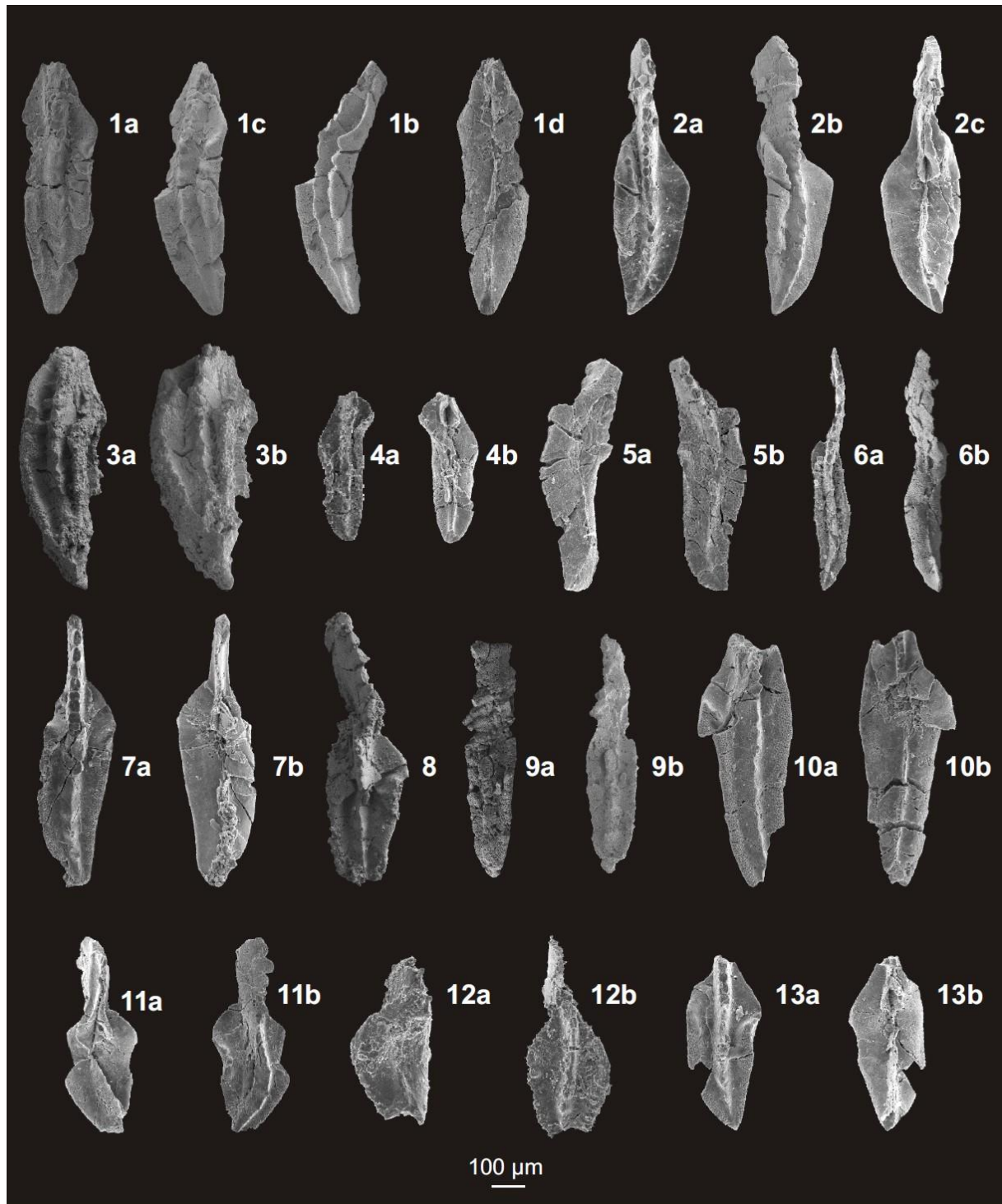
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**SD. 1.** Conodont occurrences in the Novchomok (22) section (Nov 22). Abbreviations: *Pa. gr.* – *Palmatolepis gracilis*; *Bi. cost.* – *Bispathodus costatus*; *ac.* – *aculeatus*; *Pr.* – *Protognathodus*

Conodont zones/subzones	<i>Pa. gr. manca</i> – <i>Bi.cost.</i>	<i>Bi. ac. aculeatus</i> – <i>Bi. ultimus</i>		<i>Pr. meisch neri</i>	? <i>Pr. meisch neri</i>	?
Sample numbers	019	09A	01	0	1	7
Weight of samples (kg)	0.25	0.13	0.25	0.48	0.24	0.48
<i>Protognathodus collinsoni</i>				3		
<i>Protognathodus cf. collinsoni</i>				2		
<i>Protognathodus collinsoni</i> → <i>kockeli</i>				3		
<i>Protognathodus</i> sp.				3		
<i>Pseudopolygnathus</i> sp.				1		1
<i>Palmatolepis gracilis sigmoidalis</i>				3		
<i>Palmatolepis gracilis</i>				2		
<i>Palmatolepis perlobata</i>				3		
<i>Palmatolepis</i> sp.		1		1	1	
<i>Bispathodus cf. B. aculeatus aculeatus</i>		1				
<i>Polygnathus vogesi</i>			1			
<i>Polygnathus</i> aff. <i>P. styriacus</i>		1				
<i>Polygnathus communis renatae</i>				3		
<i>Polygnathus communis dentatus</i>	1			1		
<i>Polygnathus communis</i> aff. <i>dentatus</i>				1		
<i>Polygnathus communis communis</i>	2			10		
<i>Polygnathus communis</i> ssp. A				2		
<i>Polygnathus communis</i> ssp. B				2		
<i>Polygnathus communis</i>				14		
<i>Polygnathus</i> sp.	1	1	5	45	4	
<i>Pseudopolygnathus controversus</i> M 1	1					
<i>Pseudopolygnathus cf. brevipennatus</i>				1		
<i>Pseudopolygnathus</i> aff. <i>Ps. primus</i>	1			1?		
<i>Pseudopolygnathus</i> sp.	2					
<i>Belodella</i> sp.				1		
<i>Panderodus</i> sp.				1		
Ramiforms	0	4				
	8	4	6	101	5	1

**SD. 2.** Selected characteristic conodont elements from the Novchomok-22 section



All conodont elements (P<sub>1</sub>) are from the sample Nov. 22-0.

1. *Polygnathus communis dentatus* Druce (1a. upper, 1b. oblique, 1c. lateral, 1d. lower views, MUZ PIG 1825.II.24), 2. *Polygnathus communis* aff. *dentatus* Druce (2a. upper, 2b.

lateral/oblique, 2c. lower views, MUZ PIG 1825.II.25), 3, 4. *Polygnathus communis* ssp. A. (3a. upper/oblique, 3b. upper views, MUZ PIG 1825.II.26; 4a. upper, 4b. lower views of juvenile form, MUZ PIG 1825.II.27), 5, 6. *Polygnathus communis* ssp. B. (5a. lower/oblique, 5b. upper views, MUZ PIG 1825.II.28; 6a. upper, 6b. lower views of juvenile form, MUZ PIG 1825.II.29), 7, 8. *Polygnathus communis renatae* Corradini and Spalletta (7a. upper, 7b. lower views, MUZ PIG 1825.II.30; 8. upper view, MUZ PIG 1825.II.31), 9, 10. *Polygnathus* sp. (9a. oblique, 9b. upper views of juvenile form, MUZ PIG 1825.II.32; 10a. upper, 10b. lower views, MUZ PIG 1825.II.33), 11-13. *Polygnathus communis communis* Branson and Mehl (11a. lower, 11b. upper views, MUZ PIG 1825.II.34; 12a. lower, 12b. upper views, MUZ PIG 1825.II.35; 13a. upper, 13b. lower views, MUZ PIG 1825.II.36).

Illustrated specimens were attributed to *P. communis* ssp. A (SD2: 3, 4) based on the observation that they possess small elongated basal pit with thickened margins protruding above the platform surface in its anterior part. Behind the basal pit there is a depression characteristic for *Polygnathus communis*. Behind the depression a narrow elevated keel is visible. Platform is smooth, narrow, elongated, with a pointed posterior top. Carina is fairly massive and consisting of densely arranged nodes which are smaller and more widely spaced posteriorly. Carina can be straight or slightly curve and its height is more or less equal to upturned platform margins which run parallel to the carina. The outer margin is shorter than the inner one and therefore the geniculation points are not opposite. Behind the geniculation points the anterior trough margins join the blade at the same level. The outer anterior trough is longer and it is widest just behind the geniculation point, and its margin runs obliquely to the blade. The inner one is much shorter and its margin is rounded.

The illustrated specimens *Polygnathus communis* ssp. B. (SD2: 5, 6) are very similar to the representatives of *P. communis* ssp. A, they differ in possessing markedly sigmoidal blade and carina, similarly as platform margins running parallel to the carina.

**SD. 3.** (A)  $\delta^{13}\text{C}_{\text{org}}$  vs Hg, (B)  $\delta^{13}\text{C}_{\text{org}}$  vs TOC, (C)  $\delta^{13}\text{C}_{\text{carb}}$  vs Hg, and Hg vs TOC scatter diagrams for the Novchomok section. Increases in Hg content correlate with lower carbon isotope values. Note that high Hg concentrations do not correlate with increases in TOC contents.

