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SUPPLEMENTARY ONLINE MATERIAL FOR

New data on the anatomy of fuxianhuiid arthropod *Guangweicaris spinatus* from the lower Cambrian Guanshan Biota, Yunnan, China

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Supplementary Online Material

SOM Fig. 1. Type specimens of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 from the Gaoloufang section of the Wulongqing Member (Canglangpu Formation), in the vicinity of Guangweicun (Guangwei village), Guandu District of Kunming (Yunnan, China)

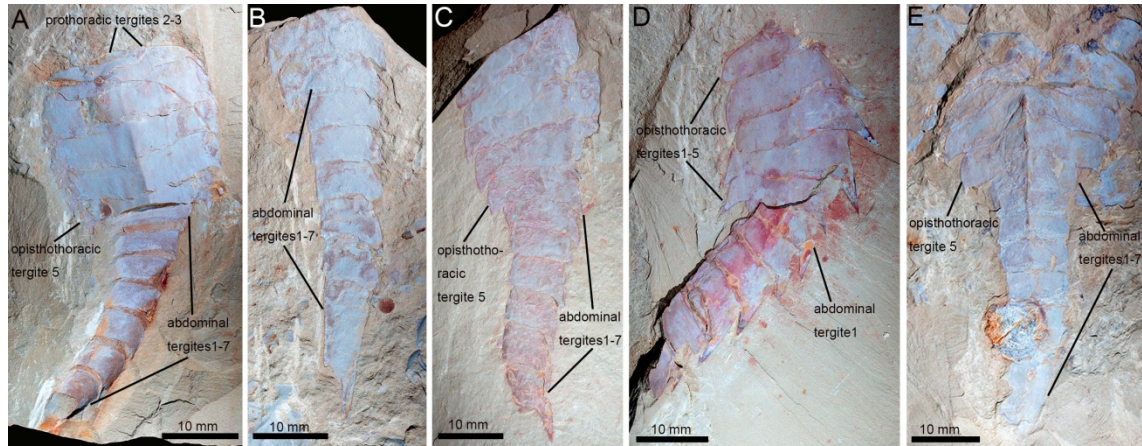
SOM Table 1. Carapace length and width measurements and ratio for specimens of *Guangweicaris spinatus* Luo, Fu and Hu, 2007

SOM Table 2. Prothoracic length and width measurement of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 specimens

SOM Table 3. Opisthothoracic and abdominal length and width measurements of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 specimens

SOM Table 4. Axial spine measurements (including parent tergite length for comparison) of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 specimens

SOM Fig. 1. Type specimens of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 from the Gaoloufang section of the Wulongqing Member (Canglangpu Formation), in the vicinity of Guangweicun (Guangwei village), Guandu District of Kunming (Yunnan, China). A. Holotype, dorsal view, Kgs-1-26. B. Paratype, lateral view, Kgs-1-42a. C. Paratype, lateral view, Kgs-1-41. D. Paratype, lateral view, Kgs-1-40. E. Paratype, dorsal view, Kgs-1-29.



SOM Table 1. Carapace length and width measurements and ratio for specimens of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 preserving a carapace from Guanshan Biota. Length measurements were taken sagittally from the anterior tip of the carapace to the posterior carapace margin, whilst the width was measured transversely along the widest point of the carapace. Specimens with a dagger (†) belong to the type series (paratypes) of this species. A double dagger (‡) indicates that the measurement was extrapolated based on half the carapace width. All measurements in millimetres. Abbreviations: Cp, carapace; L, length; W, width.

Number	CpL(mm)	CpW(mm)	L:W ratio
Unnumbered	11.2	24.6	1:2.2
Kgs-1-137	?	21.0	?
Kgs-6-108	9.2	21.1 (‡)	1:2.3
Kgs-1-54 (†)		Incompletely preserved	
Kgs-1-59 (†)		Incompletely preserved	
YKLP 11566	5.7	11.3	1:2
YKLP 11568	10.0	27.8	1:2.8
YKLP 11141	10.0	23.5	1:2.4

SOM Table 2. Prothoracic length and width measurement of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 specimens from Guanshan Biota. Specimens with a dagger (†) belong to the type series (paratypes) of this species. A double dagger (‡) indicates that the measurement was extrapolated from half the tergal width. A dash “-” indicates this feature is not preserved in this specimen. All measurements in millimetres. Abbreviations: Pr, prothoracic tergite; L, length; W, width.

Number	Pr1(L)/Pr1(W)	Pr2(L)/Pr2(W)	Pr3(L)/Pr3(W)	Op1(L)/Op1(W)
Kgs-1-39 (†)	- / -	0.9 / 5.4	1.4 / 6.9	3.8 / 14.5
YKLP 11564	0.5 / 3.6	1.0 / 7.6	1.7 / 10.0	5.6 / 22.4
YKLP 11143	- / -	- / -	1.6 / 10.6	25.5
YKLP 11146	? / 2.1	? / 5.2	? / 7.6	19.6
YKLP 11160	- / -	2.0 / 8.9	2.0 / 12.3	28.6

SOM Table 3. Opisthothoracic and abdominal length and width measurements of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 specimens from Guanshan Biota. Specimens with a dagger (†) belong to the type series (paratypes) of this species. A double dagger (‡) indicates that the measurement was extrapolated from half the tergal width. A dash “-” indicates this feature is not preserved in this specimen. All measurements in millimetres. Abbreviations: Ab, abdominal tergites; Op, opisthothoracic tergites; L, length; W, width.

Number	Op1(L)/Op1(W)	Op2(L)/Op2(W)	Op3(L)/Op3(W)	Op4(L)/Op4(W)	Op5(L)/Op5(W)	Ab1(L)/Ab1(W)	Ab2(L)/Ab2(W)	Ab3(L)/Ab3(W)	Ab4(L)/Ab4(W)	Ab5(L)/Ab5(W)	Ab6(L)/Ab6(W)	Ab7(L)/Ab7(W)
Unnumbered	- / 24.1	7.4 / 27.5	6.8 / 27.3	6.5 / 25.3	5.2 / 20.1	- / ?	7.6 / 16.7	7.0 / 12.8	6.8 / 10.3	7.6 / 9.6	8.5 / 8.2	14.1 / 6.3
Kgs-1-03 (†)	3.74 / 21.3	6.7 / 23.6	7.2 / 24.0	7.3 / 19.3	5.5 / 14.1	5.3 / 10.1	5.8 / 8.0	7.1 / 7.8	8.2 / 7.6	8.7 / ?	- / ?	15.7 / ?
Kgs-1-24 (†)	- / -	- / -	4.8 / 22.2	5.7 / 19.5	6.0 / 11.6	4.8 / 8.9	4.5 / 6.9	- / -	- / -	- / -	- / -	- / -
Kgs-1-25 (†)	4.8 / 19.9	5.4 / 24.1	5.2 / 23.6	5.9 / 22.5	5.4 / 17.9	? / ?	- / -	- / -	- / -	- / -	- / -	- / -
Kgs-1-26 (*)	4.5 / 21.4	6.2 / 24.3	5.8 / 24.1	5.7 / 21.3	4.4 / 17.1	3.6 / 12.3	4.1 / 9.3	4.5 / 7.7	5.1 / 6.9	5.4 / 6.7	5.1 / 6.2	9.6 / 4.9
Kgs-1-29 (†)	- / -	- / -	7.3 / 32.7 (‡)	7.3 / 16.3	6.1 / 25.9	6.7 / 21.6	6.3 / 13.3	5.8 / 11.4	5.5 / 10.4	5.8 / 9.9	5.8 / 9.1	- / ?
Kgs-1-30 (†)	3.3 / 21.2	6.2 / 24.7	7.2 / 24.6	6.8 / 21.1	5.7 / 16.4	8.8 / 13.2	6.9 / 13.3	5.6 / 9.9	6.0 / 9.0	6.9 / 9.2	7.5 / 7.6	- / ?
Kgs-1-32 (†)	4.6 / 25.1	6.4 / 27.2	6.6 / 26.9	7.6 / 24.8	6.8 / 20.8	6.5 / 12.7	6.0 / 11.1	7.4 / 9.9	6.8 / 9.5	- / 8.2	- / -	- / -
Kgs-1-33 (†)	4.8 / 21.6 (‡)	5.32 / 21.1	5.3 / 23.2	5.6 / 22.1	6.5 / 19.0	5.6 / 15.5	8.2 / 10.3	6.3 / 8.9	- / ?	- / -	- / -	- / -
Kgs-1-34 (†)	- / -	- / -	5.3 / 21.9	6.1 / 17.2 (‡)	5.2 / 14.8 (‡)	4.9 / 8.3	4.7 / 7.8	4.1 / ?	3.9 / ?	4.5 / ?	- / ?	- / -
Kgs-1-39 (†)	3.8 / 14.5	4.9 / 16.2	5.0 / 15.5	4.9 / 12.9	4.6 / 10.3	4.6 / 8.6	3.4 / 7.3	3.5 / 6.6	4.1 / 5.7	4.2 / 5.4	5.1 / 4.9	8.13 / 3.8
Kgs-1-63 (†)	- / -	5.4 / -	6.0 / 21.0	5.0 / 18.8	5.2 / 15.9	4.7 / 10.6	4.6 / 7.9	3.9 / 7.3	4.0 / 6.8	4.3 / 6.2	4.9 / 5.6	9.0 / 4.2
YKLP 11564	5.6 / 22.4	7.7 / 25.1	7.2 / 24.5	6.2 / 22.8	6.2 / 19.1	5.5 / ?	5 / ?	4.7 / ?	5.8 / ?	6.4 / ?	7.5 / ?	11.5 / ?
YKLP 11566	3.9 / -	7.3 / -	6.9 / ?	5.8 / ?	5.4 / ?	4.9 / ?	4.3 / 8.2	4.3 / 7.4	4.5 / 6.4	4.7 / 5.8	4.7 / 5.0	- / 5.1
YKLP 11141	4.7 / 22.2	6.3 / 22.4	6.1 / 22.3	6.4 / 20.7	5.6 / 19.5 (‡)	4.0 / 11.8	4.1 / 8.8	4.0 / 8.8	5.7 / 9.7	5.5 / 8.5	8.4 / ?	11.0 / ?
YKLP 11142	- / 26.9	6.0 / 27.6	6.4 / 25.7	6.4 / 22.3	5.9 / 14.8	? / ?	? / ?	? / ?	- / -	- / -	- / -	- / -
YKLP 11143	7.0 / 25.5	6.8 / 24.0	7.4 / 21.6	6.0 / 18.5	5.8 / 12.0	? / 10.4	- / -	- / -	- / -	- / -	- / -	- / -
YKLP 11145	- / ?	4.8 / 27.0 (‡)	5.8 / 23.2 (‡)	5.7 / ?	6.2 / 15.2	6.6 / 11.9	5.0 / 7.9	5.4 / 7.3	5.3 / 7.0	5.7 / 6.2	7.1 / 6.0	10.0 / 4.6
YKLP 11146	2.5 / 19.6	4.9 / 21.1	5.5 / 19.8	4.6 / 17.8	6.0 / 15.1	5.3 / 9.2	5.9 / 8.7	5.0 / 7.2	4.4 / 7.1	4.0 / 5.8	5.5 / 4.9	8.6 / 4.2
YKLP 11147	- / 19.1	6.3 / 21.5	7.7 / 22.7	6.4 / 20.4	4.9 / 14.3	5.3 / 8.5	5.3 / 8.1	5.1 / 7.3	5.2 / 6.8	6.0 / 6.1	5.5 / 5.3	9.5 / 5.3
YKLP 11148	5.0 / -	5.84 / 29.3 (‡)	6.5 / 29.1 (‡)	6.7 / 27.4 (‡)	6.1 / 22.3 (‡)	4.9 / 12.4	5.0 / 10.1	4.9 / 8.6	5.1 / 8.2	5.3 / 8.2	5.8 / 7.1	11.6 / 6.1

SOM Table 4. Axial spine measurements (including parent tergite length for comparison) of *Guangweicaris spinatus* Luo, Fu and Hu, 2007 specimens from Guanshan Biota. Specimens with a dagger (†) belong to the type series (paratypes) of this species. A dash “-” indicates this feature is not preserved in this specimen. Measurements in millimetres and angles. Abbreviations: Ab, abdominal tergites; Ax, axial spine; Op, opisthothoracic tergites; L, length.

Number	<i>Op2L/AxL</i> (°)	<i>Op3L/AxL</i> (°)	<i>Op4L/AxL</i> (°)	<i>Op5L/AxL</i> (°)	<i>Ab1L/AxL</i> (°)	<i>Ab2L/AxL</i> (°)	<i>Ab3L/AxL</i> (°)	<i>Ab4L/AxL</i> (°)	<i>Ab5L/AxL</i> (°)	<i>Ab6L/AxL</i> (°)	<i>Ab7L/AxL</i>
Kgs-1-137	6.3 / 4.1 (140)	6.1 / 4.1 (125)	5.4 / 4.3 (129)	4.7 / 3.6 (130)	? / ? (?)	5.4 / 3.7 (142)	4.7 / 2.8 (134)	5.5 / 3.3 (130)	6.1 / 3.3 (126)	6.4 / 5.0 (94)	12.4 / 6.6
Kgs-1-09 (†)	7.5 / ? (156)	7.8 / ? (137)	7.8 / ? (128)	9.0 / ? (140)	7.9 / ? (145)	7.0 / ? (142)	7.0 / ? (?)	7.6 / ? (?)	8.0 / ? (123)	8.3 / ? (?)	15.3 / ?
Kgs-1-40 (†)	6.6 / 6.0 (147)	7.7 / ? (143)	8.1 / 7.3 (126)	7.6 / ? (?)	6.0 / ? (128)	5.4 / ? (138)	6.2 / ? (145)	7.4 / ? (122)	? / ? (?)	? / ? (?)	- / -
YKLP 11151-2	8.7 / 7.3 (143)	8.5 / 6.6 (143)	7.1 / 7.1 (138)	8.3 / 5.4 (126)	7.6 / 6.4 (132)	7.1 / ? (142)	7.4 / ? (121)	7.6 / ? (121)	6.8 / ? (134)	8.4 / 6.9 (133)	? / ?
YKLP 11161	6.8 / 7.2 (130)	8.8 / 5.2 (140)	9.4 / ? (144)	8.8 / ? (150)	7.66 / ? (?)	5.3 / ? (?)	5.5 / ? (?)	- / - (-)	- / - (-)	- / - (-)	- / -
YKLP 11162	6.1 / 6.8 (144)	6.5 / 6.1 (130)	7.6 / 4.8 (132)	6.2 / 3.5 (136)	6.3 / ? (?)	6.6 / ? (?)	- / - (-)	- / - (-)	- / - (-)	- / - (-)	- / -
YKLP 11164	6.9 / 8.4 (126)	7.4 / 7.3 (127)	7.2 / 7.4 (117)	6.8 / ? (?)	4.9 / 7.4 (119)	6.0 / 6.8 (126)	4.9 / 5.5 (116)	5.5 / ? (?)	8.3 / ? (?)	9.5 / ? (?)	12.6 / ?
YKLP 11179	5.0 / 6.0 (131)	4.4 / 5.1 (137)	4.1 / 5.1 (134)	3.6 / 3.7 (121)	3.7 / ? (?)	3.8 / - (-)	5.0 / - (-)	4.6 / - (-)	6.2 / - (-)	5.78 / - (-)	10.7 / -