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SUPPLEMENTARY ONLINE MATERIAL FOR

A new species of *Mixosaurus* from the Middle Triassic of Luxi County, Yunnan Province, South China

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Published in *Acta Palaeontologica Polonica* 2024 69 (2): 263-280.
<https://doi.org/10.4202/app.01133.2024>

Supplementary Online Material

SOM 1

Table S1. Selected measurements of *Mixosaurus luxiensis* sp. nov.

Table S2. Measurements of the preserved mid-caudal vertebrae of *Mixosaurus luxiensis* sp. nov.

Figure S1. The posterior skull and cervical region of *Mixosaurus luxiensis* sp. nov.

Figure S2. The mid-caudal vertebra series of *Mixosaurus luxiensis* sp. nov.

SOM 2 Data matrix available at http://app.pan.pl/SOM/app69-Fang_etal_SOM/SOM_2.nex

Table S1. Selected measurements of *Mixosaurus luxiensis* sp. nov. (HFUT HL-21-08-002).

measurement		value (in mm)
skull	length (from anterior tip of premaxilla to posterior edge of squamosal)	131.2+
	height (from dorsal edge of parietal to ventral edge of jugal)	45.0
orbit	anteroposterior length	36.8
	dorsoventral height	25.0
postnarial skull length		68.6
postorbital skull length		18.5
basioccipital	anteroposterior length	15.0
	maximum mediolateral width	12.6
	condyle mediolateral width	6.7
jaw length (distance between anterior tip of dentary to posterior edge of articular)		~160
anterior tooth (first tooth in left lower jaw)	crown height (apicobasal)	1.1
	crown width (mesiodistal)	0.7
posterior tooth (largest tooth in right lower jaw)	crown height (apicobasal)	2.4
	crown width (mesiodistal)	2.1

posterior tooth		crown height (apicobasal)	1.7
(last tooth in right lower jaw)		crown width (mesiodistal)	1.8
axis		centrum length (anteroposterior)	~5
		centrum height (dorsoventral)	~10
		arch total height (dorsoventral)	17.5
		spine height (dorsoventral)	~10
		spine width (at base, anteroposterior)	~8
anterior centrum preserved)	dorsal (best preserved)	height (dorsoventral)	7.2
anterior neural arch preserved)	dorsal (best preserved)	arch total height (dorsoventral)	~20
		spine height (dorsoventral)	~16
middle centrum preserved)	dorsal (best preserved)	height (dorsoventral)	8~9
		length (anteroposterior)	6~7
posterior centrum preserved)	dorsal (best preserved)	height (dorsoventral)	10+
		length (anteroposterior)	7~8
longest neural spine height (dorsoventral)			~21
mid-caudal vertebra series total length			112.9

rib chord length		100+
right scapula	anteroposterior length	~46
	mediolateral width (including the glenoid process)	27.5
right coracoid	anteroposterior length	~47
left coracoid	mediolateral width (including the glenoid process)	27.3
right humerus	maximum length (proximodistal)	24.1
	distal width	19.6
right radius	maximum length (proximodistal)	19.9
	proximal width	11.4
	distal width	12.5
	minimum width at notch at midshaft	7.6
	maximum width at flange at midshaft	8.4
right ulna	maximum length (proximodistal)	18.3
	proximal width	11.4
	distal width	13.0
	minimum width at notch	8.3
right intermedium	proximodistal length	8.0
	anteroposterior width	9.6
right manus	total proximodistal length (from distal end of radius to distalmost phalanges)	~45

right femur	maximum length (proximodistal)	16.6
	distal width	11.5
right tibia	maximum length (proximodistal)	13.5
	proximal width	9.4
	distal width	9.9
right fibula	maximum length (proximodistal)	13.2

Table S2. Measurements of the preserved mid-caudal vertebrae of *Mixosaurus luxiensis* sp. nov. (HFUT HL-21-08-002).

Number (from anterior to posterior)	centrum height (mm)	centrum length (mm)	arch total height (mm)	centrum height/length ratio
1	10.1	7.6	/	1.33
2	11.3	7.4	/	1.53
3	11.3	7.0	/	1.61
4	11.3	6.8	/	1.66
5	11.1	6.6	/	1.68
6	11.4	6.4	17+	1.78
7	11.6	7.0	/	1.66
8	12.1	6.3	15+	1.92
9	12.1	5.8	18.8	2.09
10	12.1	6.4	18.0	1.89
11	11.8	6.5	16.0	1.82
12	12.0	5.6	14.4	2.14
13	12.2	5.6	13.7	2.18
14	11.8	5.3	12.7	2.23
15	11.5	5.5	10.7	2.09
16	11.7	5.4	9.8	2.17
17	11.6	5.8	9.8	1.98

18	10.3+	5.0+	9.6	~2
19	/	/	6+	/
20	/	/	/	/

Figure S1. The posterior skull and cervical region of *Mixosaurus luxiensis* sp. nov. (HFUT HL-21-08-002): photograph (A) and interpretative drawing (B). Dashed lines indicate inferred margins. The ' symbol indicates left elements. Abbreviations: an, angular; ar, articular; ax, axis; bo, basioccipital; cb, ceratobranchial; cl, clavicle; co, coracoid; dp, diapophyses; icl, interclavicle; j, jugal; na, neural arch; p, parietal; po, postorbital; pof, postfrontal; pt, pterygoid; q, quadrate; san, surangular; sc, scleral plates; sp, splenial; sq, squamosal; st, supratemporal.

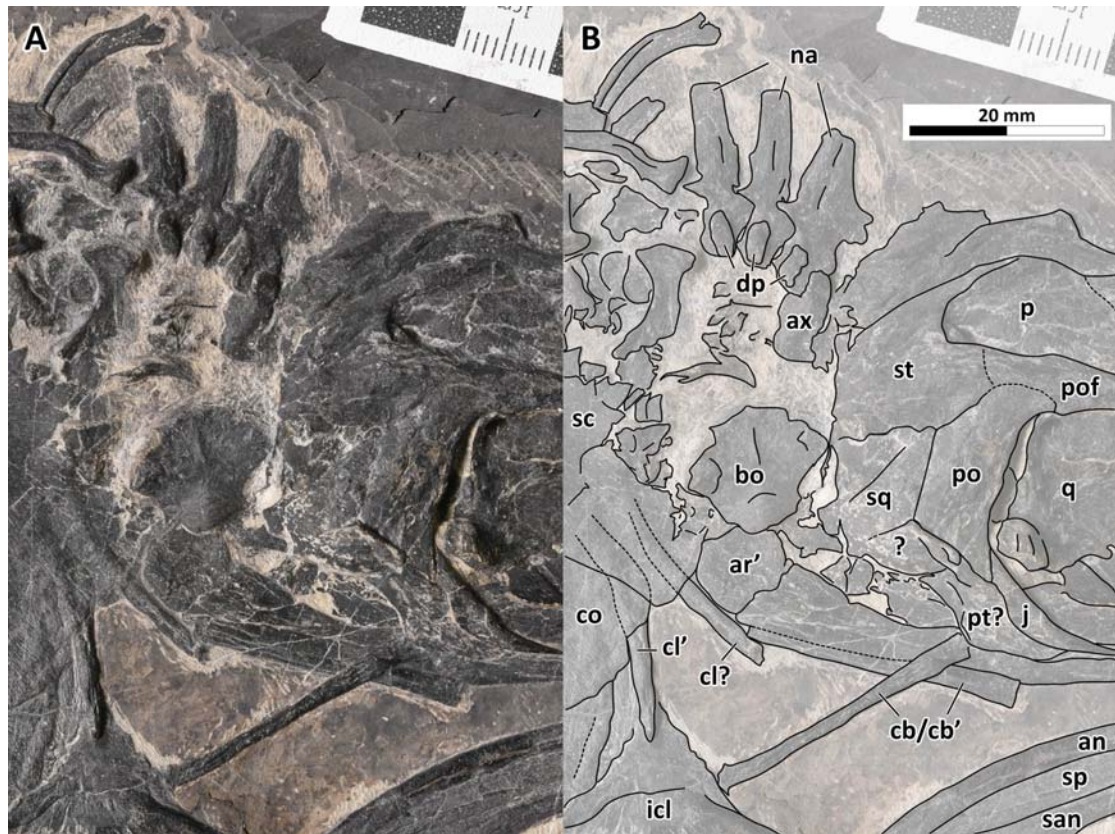


Figure S2. The mid-caudal vertebra series of *Mixosaurus luxiensis* sp. nov. (HFUT HL-21-08-002): photograph (A) and interpretative drawing (B). Blue indicates centra; yellow indicates neural arches; red indicate haemal arches (chevrons). Measurements of numbered vertebra listed in Table S2.

