

## Supplementary Materials

### Supplementary Table S1 Morphometric data of *Pegasus sinensis* sp. nov.

Measurement	Holotype	Paratype Range (n=13)	Mean	SD
Standard length—SL (mm)	73.40	65.02-75.59	68.76	
Precaudal length PCL (mm)	90.10	79.62-92.99	84.54	
<b>Percentage of standard length (%)</b>				
Carapace length (CaL)	27.50	34.24-39.56	36.76	3.43
Tail length (TaL)	45.90	60.44-65.76	63.75	1.72
Prepectoral width (PPW)	16.20	20.43-24.74	22.21	1.15
Interpectoral width (IPW)	13.60	15.56-21.43	17.92	1.50
Carapace width (CaW)	12.60	14.44-18.15	16.30	1.27
Body depth (BD)	7.70	9.23-11.22	10.09	0.61
Rostrum length (RoL)	16.70	21.01-25.53	22.88	1.36
Rostrum width at tip (RoW-tip)	2.20	2.65-3.75	3.24	0.31
Orbit length (OrL)	3.70	4.88-5.94	5.41	0.28
Interorbital width (INO)	4.30	5.67-6.92	6.25	0.37
Head width (HDW)	10.40	13.67-17.61	14.70	1.02
Length of 5th pectoral ray (PIL-5th)	15.03	18.83-23.85	21.22	1.19
Height from the dorsal fin to the anal fin	5.40	6.13-8.36	7.13	0.53
Rostrum tip to pelvic fin length	41.20	48.90-57.53	53.91	2.89
Rostrum tip to anal fin length	52.10	67.95-74.02	70.94	1.82
Length from base of pectoral fin to pelvic fin	12.10	15.14-19.71	16.84	1.59

**Supplementary Table S2** Morphological comparison of *Pegasus sinensis* **sp. nov.**, *P. volitans*, *P. tetrabelos*, *S. laternarius*, and *S. nanhaiensis*. Data for *P. volitans*, *P. tetrabelos*, *S. laternarius*, and *S. nanhaiensis* are referred from Osterhage et al., 2016; Zhang et al., 2020.

	<i>Pegasus sinensis</i> <b>sp.</b>	<i>P. volitans</i>	<i>P. tetrabelos</i>	<i>S. laternarius</i>	<i>S. nanhaiensis</i>
<b>Tail ring</b>	12	12	12	11	11
<b>Pectoral fin</b>	11	11	9-10 (usually	11	11
<b>Pelvic ray</b>	2	2	2	2	2
<b>Dorsal fin (ray)</b>	5	5	5	5	5
<b>Anal fin (ray)</b>	5	5	5	5	5
<b>Caudal fin</b>	8	8	8	8	8
<b>Standard</b>	65.0-75.6	82.2-114.6	78.8-97.6	43.8-67.2	47.1-62.3
<b>Carapace</b>	14.4-18.2	12.8-15.5	13.5-18.1	24.7-32.2	28.8-37.0
<b>Rostrum</b>	21.0-25.53	21.3-29.3	22.5-29.5	7.5-19.9	4.8-17.4
<b>Tail length of</b>	60.4-65.8	59.2-65.3	59.3-65.2	47.3-58.5	45.1-52.8