**Table S1.** Measurement information on the whole body and head of specimens of *Parioscorpio venator* on which the rediagnosis and redescription were primarily based.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Specimen Number (UWGM) | 2793 | 2764 | 2785 | 2798 | 2857 a+b | 2885 a+b |
| Maximum Body Length | 19.77 | 28.03 | 17.48\* | 3.94\* | 18.2 | 16.43 |
| Maximum Body Width | 9.04 | 9.77 | 11.27 | 6.21 | 6.657 | 5.41 |
| Head Length (excluding appendages) | 3.88 | 3.12 | 4.84 | 3.50 | 3.66 | NA |
| Head Width (excluding appendages) | 5.19 | 7.24 | 7.07 | 4.55 | 4.76 | NA |
| Head Muscle Block Length (l/r) | 3.58 / 3.46 | NA / NA | 4.95 / 4.97 | 3.27 / 4.21 | 3.20 / 3.02 | NA / NA |
| Head Muscle Block Width (l/r) | 1.65 / 1.56 | NA / NA | 2.2 / 2.10 | 1.54 / 1.76 | 1.34 / 1.41 | 0.58 / NA |
| GA Article 2 Length (l/r) | 1.53 / NA | NA / NA | 2.17 / 2.09 | 1.95 / 2.01 | 1.51 / 1.57 | NA / NA |
| GA Article 2 Width (l/r) | 1.10 / NA | NA / NA | 1.40 / 1.15 | 1.01 / 1.08 | 1.02 / 0.94 | NA / NA |
| GA Article 3 Length (l/r) | 3.51 / NA | NA / NA | 2.59\* / 3.86 | 3.03 / 2.76 | 2.21 / NA | NA / NA |
| GA Article 3 Width (l/r) | 1.63 / NA | NA / 1.21 | 1.23 / 1.33 | 1.28 / 1.56 | 1.12 / NA | 0.82 / NA |
| GA Article 4 Length (l/r) | 1.78 / NA | NA / NA | NA / NA | 1.48 / 1.87 | NA / NA | NA / NA |
| GA Article 4 Width (l/r) | 0.57 / NA | NA / NA | NA / NA | 0.69 / 0.63 | NA / NA | NA / NA |
| C2 Endopod Podomere 1 Length (l/r) | 0.97 / NA | NA / NA | 1.48 / 1.46 | 1.24 / 1.41 | 1.20 / 1.34 | NA / NA |
| C2 Endopod Podomere 1 Width (l/r) | 0.37 / NA | 1.04 / 1.11 | 0.57/ 0.60 | 0.46 / 0.35 | 0.34 / 0.33 | NA / NA |
| C2 Endopod Podomere 2 Length (l/r) | NA / NA | 1.74 / NA | 2.29 / 1.50 | 1.60 / 1.87 | 0.96 / 1.21\* | NA / NA |
| C2 Endopod Podomere 2 Width (l/r) | NA / NA | 0.37 / NA | 0.35 / 0.29 | 0.50 / 0.32 | 0.24 / 0.37 | NA / NA |
| C2, Exopod Unit Length (l/r) | 1.23 / NA | 2.23 / 2.04 | 1.6 / 1.52 | 1.55 / 1.24 | 1.07 / 1.18 | NA / NA |
| C2, Exopod Unit Width (l/r) | 1.06 / NA | 1.25 / 1.25 | 1.0 / 1.09 | 0.98 / 1.14 | 0.76 / 0.65 | NA / NA |

Note that these measurements are based only on the axial portion of the body, since the pleural portions and anterior margin of the head shield are poorly preserved or absent on the available specimens. Further, UWGM2854 is not included in this table since no measurable parts of its head are preserved. All dimensions are in millimeters.

Abbreviations: GA– great appendage; C2– second cephalic appendage; l/r– left and right-side measurements, respectively; NA– morphology not preserved, therefore no measurement possible; \*– measure is clearly incomplete (e.g. morphology is cut off by matrix edge).