**APPENDIX S3**. Average dimensions and ratios of ventral valve of *Eohadrotreta*? *zhujiahensis* from the Cambrian (Series 2) Shuijingtuo Formation of the Three Gorges area, South China, demonstrating the three ontogenetic development stages respectively.

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|  **T1** | L | W | H | Lm | Lms | Wms | Li | Wi | Lf | Wf | L/W | H/L | Lm/L |
| N | 32 | 32 | 19 | 17 | 12 | 14 | 31 | 30 | 29 | 30 | 32 | 19 | 17 |
| Mean | 524 | 622 | 126 | 248 | 184 | 221 | 8 | 21 | 74 | 79 | 84.43% | 24.30% | 49.09% |
| Median | 539 | 628 | 119 | 226 | 175 | 232 | 0 | 0 | 79 | 79 | 84.23% | 23.76% | 47.78% |
| Min | 360 | 411 | 64 | 191 | 145 | 179 | 0 | 0 | 31 | 58 | 78.10% | 17.78% | 42.83% |
| Max | 649 | 831 | 254 | 339 | 235 | 261 | 70 | 170 | 115 | 97 | 88.60% | 39.20% | 58.10% |
| SD | 89 | 113 | 40 | 44 | 27 | 27 | 19 | 50 | 21 | 10 | 2.36% | 4.69% | 4.25% |
| **T1** | Lms/L | Lms/Wms | Li/L | Li/H | Wi/W | Li/Wi | Lf/L | Lf/H | Lf/Wf | Wf/W |
| N | 13 | 12 | 32 | 19 | 31 | 6 | 29 | 19 | 29 | 30 |
| Mean | 34.52% | 84.18% | 1.28% | 1.96% | 2.77% | 31.44% | 14.14% | 64.67% | 94.59% | 13.15% |
| Median | 33.08% | 85.70% | 0.00% | 0.00% | 0.00% | 29.00% | 13.64% | 58.16% | 95.70% | 12.62% |
| Min | 23.77% | 68.31% | 0.00% | 0.00% | 0.00% | 21.28% | 7.68% | 44.44% | 43.66% | 7.73% |
| Max | 65.28% | 92.35% | 11.63% | 22.97% | 22.43% | 50.00% | 19.11% | 85.29% | 146.55% | 22.40% |
| SD | 12.34% | 7.47% | 3.01% | 6.04% | 6.62% | 10.00% | 3.55% | 13.78% | 29.80% | 3.12% |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  **T2**  | L | W | H | Lm | Lms | Wms | La | Li | Wi | Lc | Wc | Lf | Wf | L/W | H/L | Lm/L | Lms/L |
| N | 12 | 14 | 10 | 3 | 7 | 8 | 1 | 16 | 15 | 3 | 3 | 16 | 16 | 12 | 7 | 3 | 7 |
| Mean | 750 | 915 | 244 | 305 | 180 | 217 | 187 | 70 | 171 | 136 | 593 | 95 | 80 | 82.54% | 32.49% | 44.06% | 25.02% |
| Median | 744 | 936 | 252 | 321 | 180 | 219 | 187 | 73 | 154 | 117 | 547 | 90 | 80 | 82.27% | 32.54% | 45.78% | 25.55% |
| Min | 658 | 773 | 186 | 264 | 175 | 189 | 187 | 20 | 74 | 112 | 541 | 64 | 65 | 80.00% | 25.96% | 39.82% | 21.74% |
| Max | 835 | 1013 | 314 | 331 | 186 | 242 | 187 | 126 | 258 | 179 | 693 | 142 | 100 | 85.77% | 38.20% | 46.59 | 28.05% |
| SD | 66 | 86 | 41 | 36 | 5 | 20 | 0 | 34 | 51 | 37 | 86 | 21 | 11 | 1.86% | 4.36% | 3.70% | 2.41% |
|  **T2**  | Lms/Wms | La/L | Li/L | Li/H | Wi/W | Li/Wi | Lc/L | Wc/W | Lf/L | Lf/H | Lf/Wf | Wf/W |
| N | 7 | 1 | 12 | 10 | 13 | 15 | 2 | 2 | 10 | 10 | 16 | 14 |
| Mean | 81.92% | 27.18% | 9.21% | 31.58% | 19.03% | 40.39% | 14.02% | 61.59% | 13.22% | 40.00% | 118.07% | 9.04 |
| Median | 81.94% | 27.18% | 9.35% | 34.25% | 20.62% | 44.19% | 13.51% | 54.70% | 12.47% | 37.18% | 112.59% | 8.83% |
| Min | 75.31% | 27.18% | 2.41% | 15.63% | 9.17% | 13.04% | 13.51% | 54.70% | 9.69% | 24.15% | 98.46% | 6.66% |
| Max | 92.11% | 27.18% | 15.33% | 43.02% | 27.06% | 66.67% | 14.53% | 68.48% | 18.68% | 59.90% | 161.97% | 11.76% |
| SD | 5.53% | 0.00% | 4.08% | 10.52% | 5.53% | 15.67% | 0.72% | 9.74% | 2.64% | 11.02% | 17.89% | 1.46% |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   **T3** | L | W | H | Lms | Wms | La | Li | Wi | Lc | Wc | Lf | Wf | L/W | H/L | Lms/L |
| N | 15 | 16 | 14 | 2 | 7 | 1 | 17 | 15 | 4 | 4 | 19 | 19 | 14 | 12 | 14 |
| Mean | 1096 | 1345 | 347 | 194 | 241 | 293 | 110 | 309 | 170 | 730 | 117 | 95 | 80.39% | 32.63% | 80.39% |
| Median | 1050 | 1288 | 333 | 194 | 227 | 293 | 120 | 278 | 160 | 718 | 112 | 87 | 79.67% | 32.75% | 79.67% |
| Min | 855 | 1069 | 230 | 186 | 216 | 293 | 15 | 180 | 143 | 665 | 86 | 76 | 78.06% | 23.05% | 78.06% |
| Max | 1617 | 2055 | 535 | 202 | 305 | 293 | 162 | 594 | 219 | 820 | 181 | 163 | 85.13% | 38.10% | 85.13% |
| SD | 224 | 289 | 69 | 11 | 31 | 0 | 38 | 114 | 34 | 65 | 25 | 24 | 2.14% | 4.48% | 2.14% |
| **T3**  | Lms/Wms | La/L | Li/L | Li/H | Wi/W | Li/Wi | Lc/L | Wc/W | Lf/L | Lf/H | Lf/Wf | Wf/W |
| N | 2 | 1 | 14 | 14 | 14 | 15 | 3 | 2 | 15 | 14 | 19 | 16 |
| Mean | 79.32% | 32.20% | 10.02% | 33.58% | 22.51% | 37.88% | 15.90% | 59.48% | 10.92% | 34.51% | 124.68% | 7.22% |
| Median | 79.32% | 32.20% | 10.92% | 34.42% | 21.09% | 40.65% | 16.00% | 59.48% | 11.19% | 34.56% | 116.48% | 7.23% |
| Min | 78.48% | 32.20% | 1.60% | 17.78% | 15.35% | 8.33% | 14.97% | 51.95% | 8.24% | 25.58% | 105.66% | 5.89% |
| Max | 80.16% | 32.20% | 15.32% | 46.96% | 36.77% | 56.25% | 16.73% | 67.00% | 14.52% | 45.65% | 154.32% | 8.98% |
| SD | 1.19% | 0.00% | 3.64% | 8.77% | 6.70% | 12.72% | 0.88% | 10.64% | 1.71% | 5.00% | 17.05% | 0.98% |

All measurements are in μm. Abbreviations: L, width; W, width; H, height of valve where not specified, and of elements: a, ventral apical process; c, cardinal muscle scars; f, pedicle foramen; i, ventral intertrough; m, at maximum width; ms, metamorphic shell; T1, pedicle foramen forming stage; T2, pedicle foramen enclosing stage; T3, Intertrough increasing stage.