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Morphological variation in the rangeomorph organism *Fractofusus misrai* from the Ediacaran of Newfoundland, Canada

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Supplementary Material

**Supplementary Table 1.** Number of primary branches per row in straight specimens of *Fractofusus misrai*.

|  |  |  |
| --- | --- | --- |
| Specimen | ‘Left’ row primary branch # | ‘Right’ row primary branch # |
| 219 | 26 | 27 |
| 221 | 8 | 9 |
| 224 | 14 | 13 |
| 226 | 13 | 14 |
| 229 | 19 | 19 |
| 230 | 20 | 21 |
| 232 | 21 | 21 |
| 237 | 21 | 22 |
| 239 | 18 | 18 |
| 250 | 12 | 13 |
| 251 | 20 | 21 |
| 256 | 19 | 18 |
| 258 | 13 | 14 |
| 259 | 17 | 17 |
| 260 | 20 | 20 |
| 261 | 19 | 18 |
| 262a | 23 | 23 |
| 262c | 19 | 20 |
| 272 | 16 | 15 |
| 277 | 11 | 10 |
| 280 | 19 | 18 |
| 289 | 24 | 23 |
| 290 | 18 | 17 |
| 291 | 25 | 25 |
| 295 | 13 | 13 |
| 299 | 21 | 22 |
| 303 | 19 | 18 |
| 311 | 22 | 23 |
| 318 | 17 | 17 |
| 320 | 24 | 24 |
| 324 | 18 | 18 |
| 329 | 23 | 22 |
| 334 | 15 | 15 |
| 340 | 22 | 21 |
| 342 | 24 | 23 |
| 343 | 30 | 30 |
| 344 | 10 | 11 |
| 347 | 27 | 26 |
| 348 | 18 | 17 |

**Supplementary Table 2.** Maximum length and width (cm) of straight specimens of *Fractofusus misrai*.

|  |  |  |
| --- | --- | --- |
| Specimen | Maximum length (cm) | Maximum width (cm) |
| 219 | 15.2 | 4.3 |
| 220 | 20.3 | 2.7 |
| 221 | 11.6 | 4.6 |
| 224 | 9.3 | 4.8 |
| 226 | 15.4 | 5.0 |
| 229 | 12.8 | 1.9 |
| 230 | 8.2 | 1.2 |
| 232 | 9.1 | 3.5 |
| 237 | 12.5 | 3.4 |
| 239 | 18.4 | 3.4 |
| 250 | 6.1 | 2.3 |
| 251 | 8.0 | 5.4 |
| 256 | 7.8 | 2.8 |
| 258 | 9.6 | 2.4 |
| 259 | 9.3 | 3.6 |
| 260 | 5.4 | 2.8 |
| 261 | 10.1 | 1.8 |
| 262a | 5.7 | 1.9 |
| 262c | 8.2 | 2.1 |
| 271 | 12.2 | 2.4 |
| 272 | 8.2 | 1.7 |
| 277 | 8.9 | 3.3 |
| 278 | 6.7 | 3.9 |
| 280 | 6.4 | 2.9 |
| 289 | 16.9 | 3.0 |
| 290 | 5.7 | 1.4 |
| 291 | 8.8 | 1.5 |
| 292 | 8.3 | 3.4 |
| 295 | 11.0 | 3.2 |
| 299 | 6.1 | 1.7 |
| 300 | 11.4 | 2.4 |
| 303 | 10.2 | 4.6 |
| 311 | 8.6 | 1.8 |
| 312 | 7.6 | 2.3 |
| 316 | 12.8 | 2.6 |
| 318 | 12.6 | 4.9 |
| 320 | 8.9 | 3.3 |
| 324 | 10.8 | 3.6 |
| 326 | 11.5 | 1.9 |
| 329 | 8.1 | 2.1 |
| 334 | 19.7 | 4.1 |
| 340 | 11.5 | 4.5 |
| 342 | 9.6 | 1.9 |
| 343 | 7.2 | 2.4 |
| 344 | 11.7 | 4.9 |
| 347 | 16.4 | 3.8 |
| 348 | 7.2 | 1.6 |

**Supplementary Table 3.** Maximum length and width (cm) of kinked/curved specimens of *Fractofusus misrai*.

|  |  |  |
| --- | --- | --- |
| Specimen | Maximum length (cm) | Maximum width (cm) |
| 11 | 5.8 | 3.5 |
| 14 | 13.9 | 5.2 |
| 17 | 14.4 | 7.4 |
| 20a | 10.8 | 1.9 |
| 20b | 14.3 | 3.7 |
| 23 | 8.4 | 3.9 |
| 26 | 27.2 | 4.7 |
| 29 | 16.1 | 3.8 |
| 37 | 7.7 | 1.7 |
| 46 | 7.5 | 2.6 |
| 49 | 7.0 | 2.9 |
| 53 | 7.2 | 4.3 |
| 55 | 17.4 | 9.1 |
| 58 | 13.1 | 2.6 |
| 61 | 14.8 | 4.6 |
| 65 | 13.6 | 4.9 |
| 69 | 18.8 | 7.1 |
| 73 | 6.6 | 2.4 |
| 75 | 8.4 | 1.7 |
| 78 | 20.4 | 3.8 |
| 89a | 9.1 | 3.8 |
| 89b | 6.1 | 2.5 |
| 91 | 3.2 | 2.0 |
| 95 | 8.8 | 2.0 |
| 98 | 10.9 | 4.9 |
| 100 | 6.7 | 2.2 |
| 109 | 4.2 | 2.7 |
| 112b | 6.6 | 3.1 |
| 119 | 9.3 | 2.8 |
| 122 | 17.7 | 9.8 |
| 139 | 8.8 | 2.8 |
| 144 | 13.3 | 3.1 |
| 149 | 14.9 | 4.8 |
| 151 | 7.3 | 2.9 |
| 154 | 11.3 | 3.1 |
| 157 | 6.1 | 1.7 |
| 160 | 14.5 | 3.7 |
| 163 | 11.4 | 3.9 |
| 168 | 8.9 | 3.3 |
| 171 | 6.9 | 5.1 |
| 176 | 5.3 | 2.4 |
| 179 | 16.5 | 6.9 |
| 181 | 13.7 | 3.0 |
| 185 | 15.5 | 5.7 |
| 187 | 10.8 | 3.7 |
| 189 | 8.2 | 2.7 |
| 193 | 22.4 | 5.8 |
| 196 | 9.2 | 2.5 |
| 200 | 9.5 | 3.8 |
| 204 | 7.8 | 4.2 |
| 212 | 7.5 | 3.2 |
| 213 | 10.7 | 5.2 |
| 219 | 23.8 | 5.3 |
| 223 | 9.4 | 5.7 |
| 225 | 12.8 | 4.6 |
| 239 | 20.2 | 5.4 |
| 248a | 10.9 | 3 |
| 248b | 7.1 | 1.8 |
| 253 | 9.1 | 4.4 |
| 259 | 14.2 | 6.1 |
| 262 | 14.4 | 5.9 |
| 266 | 6.8 | 1.6 |
| 271 | 28.6 | 5.0 |
| 274 | 20.4 | 5.1 |
| 277 | 8.1 | 3.9 |
| 286 | 13.9 | 3.3 |
| 302 | 23.5 | 6.8 |
| 314 | 23.4 | 3.2 |
| 317 | 21.5 | 6.1 |
| 320 | 12.4 | 4.2 |
| 326 | 19.5 | 8.1 |
| 330 | 8.8 | 2.0 |
| 331 | 4.9 | 1.9 |
| 334 | 16.7 | 3.3 |
| 338 | 6.3 | 2.5 |
| 341 | 9.8 | 2.9 |
| 350 | 6.5 | 1.9 |
| 353 | 3.8 | 2.2 |
| 378 | 15.7 | 3.2 |
| 381 | 16.4 | 5.8 |
| 383 | 23.2 | 5.1 |
| 394 | 13.6 | 5.4 |
| 399 | 20.1 | 5.7 |
| 404a | 10.9 | 2.6 |
| 404b | 17.3 | 3.1 |
| 407 | 13.3 | 2.0 |
| 410 | 17.3 | 4.7 |
| 416 | 16.2 | 3.9 |
| 419 | 20.7 | 7.0 |
| 420 | 20.3 | 5.0 |

**Supplementary Table 4.** Number of primary branches on concave and convex margins of kinked/curved specimens of *Fractofusus misrai*.

|  |  |  |
| --- | --- | --- |
| Specimen | Primary branches on concave side | Primary branches on convex side |
| 11 | 17 | 17 |
| 14 | 21 | 22 |
| 17 | 18 | 19 |
| 20a | 18 | 17 |
| 20b | 19 | 20 |
| 23 | 20 | 21 |
| 26 | 26 | 27 |
| 29 | 23 | 25 |
| 46 | 17 | 19 |
| 49 | 15 | 16 |
| 53 | 13 | 13 |
| 55 | 13 | 14 |
| 58 | 25 | 26 |
| 61 | 24 | 24 |
| 65 | 20 | 21 |
| 69 | 14 | 14 |
| 73 | 20 | 20 |
| 75 | 17 | 17 |
| 78 | 18 | 17 |
| 83 | 18 | 19 |
| 85 | 18 | 18 |
| 89a | 16 | 17 |
| 89b | 20 | 21 |
| 91 | 12 | 13 |
| 95 | 20 | 21 |
| 100 | 13 | 14 |
| 104 | 18 | 17 |
| 109 | 13 | 14 |
| 112b | 14 | 14 |
| 122 | 15 | 15 |
| 137 | 18 | 19 |
| 139 | 18 | 19 |
| 144 | 23 | 24 |
| 149 | 15 | 15 |
| 151 | 17 | 18 |
| 157 | 18 | 19 |
| 160 | 18 | 18 |
| 163 | 19 | 20 |
| 168 | 26 | 26 |
| 171 | 13 | 12 |
| 179 | 17 | 18 |
| 181 | 19 | 20 |
| 185 | 20 | 21 |
| 187 | 24 | 25 |
| 189 | 18 | 18 |
| 193 | 20 | 20 |
| 200 | 14 | 14 |
| 204 | 20 | 21 |
| 212 | 22 | 22 |
| 213 | 17 | 18 |
| 219 | 18 | 18 |
| 225 | 19 | 20 |
| 239 | 22 | 23 |
| 248a | 17 | 18 |
| 248b | 24 | 24 |
| 253 | 24 | 25 |
| 259 | 21 | 22 |
| 262 | 24 | 25 |
| 266 | 19 | 20 |
| 274 | 20 | 21 |
| 277 | 18 | 18 |
| 286 | 21 | 22 |
| 290 | 15 | 17 |
| 291 | 17 | 17 |
| 302 | 15 | 17 |
| 326 | 24 | 25 |
| 330 | 20 | 22 |
| 331 | 21 | 22 |
| 334 | 24 | 24 |
| 338 | 21 | 22 |
| 341 | 22 | 22 |
| 347 | 15 | 17 |
| 353 | 20 | 20 |
| 356 | 19 | 20 |
| 383 | 21 | 22 |
| 394 | 25 | 26 |
| 399 | 14 | 14 |
| 404a | 20 | 21 |
| 404b | 20 | 21 |
| 407 | 24 | 25 |
| 410 | 25 | 26 |
| 419 | 20 | 22 |
| 420 | 19 | 19 |

**Supplementary Table 5.** Total body length, kink position (length of body divisions (cm) on either side of kink) and kink angle (°) in kinked specimens of *Fractofusus misrai*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Specimen | Total length (cm) | Length a (cm) | Length b (cm) | Kink angle (°) |
| 11 | 5.8 | 3.3 | 2.5 | 138 |
| 14 | 13.9 | 9.6 | 4.3 | 152 |
| 17 | 14.4 | 9.2 | 5.2 | 110 |
| 20a | 10.8 | 6.3 | 4.5 | 142 |
| 20b | 14.3 | 7.3 | 7.0 | 132 |
| 23 | 8.4 | 5.5 | 2.9 | 122 |
| 37 | 7.7 | 3.9 | 3.8 | 120 |
| 46 | 7.5 | 4.0 | 3.5 | 148 |
| 53 | 7.2 | 3.8 | 3.4 | 144 |
| 58 | 13.1 | 8.6 | 4.5 | 114 |
| 78 | 20.4 | 10.6 | 9.8 | 154 |
| 83 | 14.5 | 7.8 | 6.7 | 166 |
| 89b | 6.1 | 3.6 | 2.5 | 108 |
| 91 | 3.3 | 2.1 | 1.1 | 126 |
| 100 | 6.7 | 4.7 | 2.0 | 122 |
| 104 | 10.9 | 8.3 | 2.6 | 144 |
| 109 | 4.2 | 2.1 | 2.1 | 154 |
| 122 | 17.7 | 9.0 | 8.7 | 106 |
| 131 | 8.5 | 5.6 | 2.9 | 150 |
| 139 | 8.8 | 5.5 | 3.3 | 128 |
| 144 | 13.3 | 6.8 | 6.5 | 162 |
| 154 | 11.3 | 6.5 | 4.8 | 40 |
| 160 | 14.5 | 11.0 | 3.5 | 60 |
| 168 | 8.9 | 4.7 | 4.2 | 156 |
| 176 | 5.3 | 3.0 | 2.3 | 134 |
| 181 | 13.7 | 7.3 | 6.4 | 128 |
| 187 | 10.8 | 6.3 | 4.5 | 108 |
| 189 | 8.2 | 6.0 | 2.2 | 120 |
| 193 | 22.4 | 11.4 | 11.0 | 72 |
| 196 | 9.2 | 6.5 | 2.7 | 96 |
| 200 | 9.5 | 5.3 | 4.2 | 60 |
| 204 | 8.0 | 4.0 | 4.0 | 130 |
| 209 | 11.6 | 7.2 | 4.4 | 152 |
| 212 | 7.5 | 4.0 | 3.5 | 148 |
| 253 | 9.1 | 4.6 | 4.5 | 164 |
| 262 | 14.4 | 8.2 | 6.2 | 128 |
| 286 | 13.9 | 8.7 | 5.2 | 160 |
| 314 | 23.4 | 12.6 | 10.8 | 176 |
| 317 | 21.5 | 15.1 | 6.4 | 152 |
| 320 | 12.4 | 6.3 | 6.1 | 146 |
| 338 | 6.3 | 4.3 | 2.0 | 156 |
| 341 | 9.8 | 5.0 | 4.8 | 168 |
| 353 | 3.8 | 2.8 | 1.0 | 158 |
| 378 | 15.7 | 8.7 | 7.0 | 52 |
| 399 | 20.1 | 13.8 | 6.3 | 72 |
| 404b | 17.3 | 12.5 | 4.8 | 146 |
| 410 | 17.3 | 9.0 | 8.3 | 150 |
| 419 | 20.7 | 12.0 | 8.7 | 158 |
| 420 | 20.3 | 13.2 | 7.1 | 50 |