# Digit-only sauropod pes trackways from China – evidence of swimming or a preservational phenomenon?

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**Supplementary material. 1. Measurements (in cm) of sauropod tracks from Yanguoxia No. 2 tracksite, Gansu, China.**

| Number | L | W | D | M'L | M'D | L/W | PL | SL | TW | PA | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| YSII-SS1-LP1 | 31.0 | 74.0 | 13.4 | 39.0 | 4.7 | 0.4 | 176.0 | 284.0 | 221.3 | 101 | 29 |
| YSII-SS1-RP1 | 22.0 | 34.0 | 3.7 | — | — | 0.6 | 192.0 | 295.0 | — | 104 | 69 |
| YSII-SS1-LP2 | 25.0 | 66.0 | 13.8 | 35.0 | 0.7 | 0.4 | 181.0 | 285.0 | 212.6 | 101 | 27 |
| YSII-SS1-RP2 | 22.0 | 67.0 | 11.3 | 25.0 | 1.3 | 0.3 | 187.0 | 246.0 | — | 85 | 48 |
| YSII-SS1-LP3 | 24.0 | 65.0 | 7.9 | 30.0 | 1.1 | 0.4 | 176.0 | 220.0 | 223.1 | 82 | 22 |
| YSII-SS1-RP3 | 16.5 | 64.5 | 8.6 | 20.0 | 1.4 | 0.3 | 160.0 | 321.0 | — | 98 | 39 |
| YSII-SS1-LP4 | 26.0 | 63.0 | 12.1 | 29.0 | 1.5 | 0.4 | 256.0 | 400.0 | 299.1 | 106 | 30 |
| YSII-SS1-RP4 | 30.0 | 81.0 | 14.6 | 48.0 | 1.8 | 0.4 | 244.0 | 324.0 | — | 100 | 50 |
| YSII-SS1-LP5 | 28.0 | 62.0 | 13.7 | 42.0 | 1.3 | 0.5 | 176.0 | 318.0 | 211.6 | 101 | 40 |
| YSII-SS1-RP5 | 23.0 | 71.0 | 13.6 | 48.0 | 2.8 | 0.3 | 234.0 | 292.0 | — | 91 | 31 |
| YSII-SS1-LP6 | 27.0 | 65.0 | 12.1 | 49.0 | 0.9 | 0.4 | 172.0 | 288.0 | 208.4 | 93 | 36 |
| YSII-SS1-RP6 | 19.0 | 67.0 | 12.3 | 36.5 | 2.2 | 0.3 | 223.0 | — | — | — | 60 |
| YSII-SS1-LP7 | 17.5 | 61.0 | 11.3 | 22.0 | — | 0.3 | — | — | 336.9 | — | — |
| Mean | 23.9 | 64.7 | 11.4 | 35.3 | 1.8 | 0.4 | 198.1 | 297.5 | 244.7 | 97 | 40 |
| YSII-SS2-LP1 | 41.0 | 83.0 | 17.0 | 20.0 | 3.4 | 0.5 | 215.0 | 377.0 | 265.2 | 102 | 52 |
| YSII-SS2-RP1 | 36.0 | 75.0 | 14.2 | 17.5 | 2.2 | 0.5 | 268.0 | 433.0 | — | 119 | 55 |
| YSII-SS2-LP2 | 36.0 | 88.0 | 11.4 | 12.0 | 5.2 | 0.4 | 235.0 | 333.0 | 249.3 | 95 | 31 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| YSII-SS2-RP2 | 26.0 | 59.0 | 10.5 | 24.0 | 1.3 | 0.4 | 215.0 | 313.0 | — | 80 | 23 |
| YSII-SS2-LP3 | 26.0 | 55.0 | 11.3 | — | — | 0.5 | 270.0 | 358.0 | 302.7 | 88 | 46 |
| YSII-SS2-RP3 | 26.0 | 79.0 | 11.0 | 37.0 | 0.9 | 0.3 | 246.0 | 391.0 | — | 115 | 57 |
| YSII-SS2-LP4 | 26.0 | 67.0 | 11.8 | 26.0 | 1.2 | 0.4 | 216.0 | 363.0 | 258.8 | 112 | 41 |
| YSII-SS2-RP4 | 26.0 | 54.0 | 13.6 | 28.0 | 1.7 | 0.5 | 222.0 | 342.0 | — | 95 | 12 |
| YSII-SS2-LP5 | 28.0 | 55.0 | 13.6 | 37.0 | 1.2 | 0.5 | 240.0 | 401.0 | 294.5 | 100 | 45 |
| YSII-SS2-RP5 | 25.0 | 57.0 | 11.8 | 34.0 | 1.1 | 0.4 | 283.0 | 428.0 | — | 109 | 35 |
| YSII-SS2-LP6 | 35.0 | 64.0 | 11.2 | 32.0 | 0.7 | 0.5 | 243.0 | 350.0 | 272.4 | 98 | 35 |
| YSII-SS2-RP6 | 19.0 | 48.0 | 8.3 | 24.0 | 0.7 | 0.4 | 220.0 | 230.0 | — | 64 | 32 |
| YSII-SS2-LP7 | 24.0 | 71.0 | 8.6 | 35.0 | 3.5 | 0.3 | 215.0 | — | 249.4 | — | — |
| YSII-SS2-RP7 | 22.0 | 68.0 | 10.7 | 22.0 | 1.5 | 0.3 | — | — | — | — | — |
| Mean | 28.3 | 65.9 | 11.8 | 26.8 | 1.9 | 0.4 | 237.5 | 359.9 | 270.3 | 98 | 39 |
| YSII-SS3-LP1 | 41.0 | 87.0 | 21.0 | 21.0 | 5.5 | 0.5 | 268.0 | 501.0 | 285.8 | 110 | 44 |
| YSII-SS3-RP1 | 32.0 | 83.0 | 16.6 | 21.0 | 4.2 | 0.4 | 343.0 | 450.0 | — | 111 | 60 |
| YSII-SS3-LP2 | 29.0 | 64.0 | 10.1 | 36.0 | 3.6 | 0.5 | 194.0 | 330.0 | 283.1 | 75 | 16 |
| YSII-SS3-RP2 | 31.0 | 86.0 | 14.0 | 27.0 | 0.6 | 0.4 | 323.0 | 485.0 | — | 114 | 78 |
| YSII-SS3-LP3 | 29.0 | 74.0 | 13.8 | 27.0 | 1.8 | 0.4 | 253.0 | 402.0 | 294.2 | 97 | 44 |
| YSII-SS3-RP3 | 24.0 | 55.0 | 12.3 | 39.0 | 2.1 | 0.4 | 282.0 | 482.0 | — | 123 | 53 |
| YSII-SS3-LP4 | 25.0 | 69.0 | 11.7 | 30.0 | 1.2 | 0.4 | 266.0 | 425.0 | 314.6 | 110 | 44 |
| YSII-SS3-RP4 | 25.0 | 68.0 | 11.2 | 25.0 | 1.1 | 0.4 | 252.0 | 417.0 | — | 111 | 45 |
| YSII-SS3-LP5 | 27.0 | 67.0 | 11.3 | 28.0 | 1.1 | 0.4 | 253.0 | — | 304.2 | — | — |
| YSII-SS3-RP5 | 29.0 | 57.0 | 11.7 | 17.0 | 3.3 | 0.5 | — | — | — | — | — |
| Mean | 29.2 | 71.0 | 13.4 | 27.1 | 2.5 | 0.4 | 270.4 | 436.5 | 296.4 | 106 | 48 |
| YSII-SS4-LP1 | 35.0 | 74.0 | 9.6 | 35.0 | 0.7 | 0.5 | 170.0 | 346.0 | 203.8 | 112 | 52 |
| YSII-SS4-RP1 | 36.0 | 66.0 | 12.6 | 40.0 | 2.2 | 0.5 | 244.0 | 385.0 |  | 107 | 27 |
| YSII-SS4-LP2 | 28.0 | 67.0 | 13.6 | 38.0 | 3.5 | 0.4 | 236.0 | 408.0 | 263.8 | 116 | 31 |
| YSII-SS4-RP2 | 26.0 | 71.0 | 14.2 | 31.0 | 4.0 | 0.4 | 245.0 | — | — | — | — |
| YSII-SS4-LP3 | 28.0 | 68.0 | 12.2 | 30.0 | 1.0 | 0.4 | — | — | — | — | — |
| Mean | 30.6 | 69.2 | 12.4 | 34.8 | 2.3 | 0.4 | 223.8 | 379.7 | 233.8 | 112 | 37 |
| YSII-SS5-RP1 | 38.5 | 86.0 | 9.5 | 29.0 | 3.3 | 0.4 | 183.0 | 218.0 | 245.8 | 62 | — |
| YSII-SS5-LP1 | 30.0 | 68.0 | 12.4 | 25.0 | 0.6 | 0.4 | 232.0 | 338.0 | — | 98 | 41 |
| YSII-SS5-RP2 | 24.5 | 49.0 | 7.0 | 28.5 | 2.8 | 0.5 | 214.0 | — | 277.2 | — | — |
| YSII-SS5-LP2 | 30.0 | 75.0 | 12.3 | 24.0 | 2.4 | 0.4 | — | — | — | — | 38 |
| Mean | 30.8 | 69.5 | 10.3 | 26.6 | 2.3 | 0.4 | 209.7 | 278.0 | 261.5 | 80 | 40 |
| YSII-SS6-LP1 | 24.5 | 62.0 | 7.5 | 21.0 | 2.5 | 0.4 | 299.0 | 198.0 | 355.4 | 41 | 45 |
| YSII-SS6-RP1 | 19.0 | 69.0 | 7.8 | 31.0 | 0.2 | 0.3 | 198.0 | 219.0 | — | 54 | 67 |
| YSII-SS6-LP2 | 40.0 | 84.0 | 16.0 | 26.0 | 3.3 | 0.5 | 264.0 | 378.0 | 354.5 | 110 | 47 |
| YSII-SS6-RP2 | 21.0 | 64.0 | 8.5 | 12.0 | 1.0 | 0.3 | 195.0 | 332.0 | — | 101 | 31 |
| YSII-SS6-LP3 | 20.0 | 47.5 | 7.5 | 11.0 | 0.4 | 0.4 | 234.0 | 246.0 | 281.4 | 76 | 55 |
| YSII-SS6-RP3 | 18.0 | 51.0 | 6.0 | 15.5 | 0.5 | 0.4 | 153.0 | 211.0 | — | 72 | 42 |
| YSII-SS6-LP4 | 21.5 | 36.5 | 5.6 | — | — | 0.6 | 200.0 | 319.0 | 221.3 | 88 | 31 |
| YSII-SS6-RP4 | 35.0 | 76.0 | 11.5 | 21.0 | 0.7 | 0.5 | 257.0 | — | — | — | — |
| YSII-SS6-LP5 | 19.5 | 62.0 | 10.7 | — | — | 0.3 |  | 340.0 | — | — | 43 |
| YSII-SS6-RP5 | — | — | — | — | — | — | — | — | — | — | — |
| YSII-SS6-LP6 | 21.0 | 63.0 | 10.5 | 16.5 | 4.2 | 0.3 | 218.0 | 393.0 | 236.7 | 119 | 81 |
| YSII-SS6-RP6 | 17.5 | 47.0 | 5.7 | — | — | 0.4 | 237.0 | 374.0 | — | 107 | 70 |
| YSII-SS6-LP7 | 29.0 | 57.0 | 3.8 | — | — | 0.5 | 228.0 | — | 257.5 | — | — |
| YSII-SS6-RP7 | 24.0 | 70.0 | 4.6 | — | — | 0.3 | — | — | — | — | — |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 23.8 | 60.7 | 8.1 | 19.3 | 1.6 | 0.4 | 225.7 | 301.0 | 284.5 | 85 | 51 |
| YSII-SS7-LP1 | 24.0 | 67.5 | 10.3 | 30.0 | 3.1 | 0.4 | 357.0 | — | — | — | 44 |
| YSII-SS7-LP2 | 28.0 | 67.0 | 10.3 | 30.0 | 2.2 | 0.4 | — | — | — | — | — |
| Mean | 26.0 | 67.3 | 10.3 | 30.0 | 2.7 | 0.4 | 357.0 | — | — | — | 44 |
| YSII-SS8-RP1 | 21.0 | 57.0 | 7.6 | 21.0 | 1.8 | 0.4 | 415.0 | — | — | — | 46 |
| YSII-SS8-RP2 | 28.5 | 71.0 | 12.9 | 27.5 | 4.2 | 0.4 | — | — | — | — | — |
| Mean | 24.8 | 64.0 | 10.3 | 24.3 | 3.0 | 0.4 | 415.0 | — | — | — | 46 |
| YSII-SS9-LP1 | 23.0 | 66.0 | 12.5 | 26.5 | 3.2 | 0.3 | 188.0 | 226.0 | 247.4 | 78 | 86 |
| YSII-SS9-RP1 | 29.0 | 72.0 | 11.0 | 43.0 | 1.6 | 0.4 | 172.0 | 211.0 | — | 74 | 3 |
| YSII-SS9-LP2 | 34.0 | 104.0 | 11.5 | — | — | 0.3 | 180.0 | 257.0 | 275.2 | 41 | 73 |
| YSII-SS9-RP2 | 48.0 | 78.0 | 17.2 | 39.0 | 1.1 | 0.6 | 364.0 | 331.0 | — | 62 | 1 |
| YSII-SS9-LP3 | 30.0 | 68.5 | 7.6 | — | — | 0.4 | 246.0 | — | — | — | — |
| YSII-SS9-RP3 | 33.0 | 84.0 | 10.3 | 44.0 | 4.6 | 0.4 | | 367.0 | — | — | 70 |
| YSII-SS9-LP4 | — | — | — | — | — | — | — | — | — | — | — |
| YSII-SS9-RP4 | 30.5 | 91.0 | 6.6 | — | — | 0.3 | — | — | — | — | — |
| Mean | 32.5 | 80.5 | 11.0 | 38.1 | 2.6 | 0.4 | 230.0 | 278.4 | 261.3 | 64 | 47 |

Abbreviations: L: Track length; W: Track width; D: Track depth; M'L: Mound length; M'D: Mound depth; L/W: Track length/track width; PL: Pace length; SL: Stride length; TW: Trackway width; PA: Pace angulation; R: Rotation.

**Supplementary material. 2. The Photograph and outline drawing of the best-preserved sauropod trackway YSII-SS1. (Photographs and line drawing by L.X.)**