Table S5. Fixed clock-based mean age estimates tested with two known rates (0.0075 and 0.012 substitutions/Ma) and one hypothetical rate (0.0095 subs/Ma) for the two alternative topologies with the neotropical clade nested within the Australian clade (nested) or within the outgroup (outgroup). 95% confidence intervals can be assessed in Figures S10-15.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Node | Taxon | **nested** | **outgroup** | **nested** | **outgroup** | **nested** | | **outgroup** |
|  | **Evolutionary rate** | **0.0075** | **0.0075** | **0.012** | **0.012** | **0.0095** | | **0.0095** |
| 1 | *Boletoscapter + Pedaria* | 84.86 | 75.5 | 53.16 | 47.05 | 66.94 | | 59.67 |
| 2 | *Pedaria* | 26.38 | 25.44 | 16.96 | 15.58 | 21.5 | | 19.58 |
| 3 | Neotropical stem | 99.74 | 88.96 | 62.26 | 55.61 | 78.77 | | 70.68 |
| 4 | Neotropical crown | 71.31 | 69.63 | 44.46 | 43.52 | 56.26 | | 55.2 |
| 5 | Aust\* | 111.4 | 108.06 | 69.69 | 67.42 | 88.21 | | 85.58 |
| 26 | NZ stem | 68.01 | 65.73 | 42.29 | 41.28 | 53.48 | | 52.22 |
| 27 | NZ crown | 23.08 | 22.95 | 14.26 | 14.04 | 17.9 | | 17.86 |
| 29 | NCal stem(N Cal + *Diorygopyx*) | 70.17 | 68.55 | 43.73 | 42.96 | 55.36 | | 54.33 |
| 31 | NCal crown | 53.47 | 52.08 | 33.17 | 32.55 | 42.09 | | 41.34 |
| 6 | Aus- *Lepanus* | 108.53 | 104.92 | 67.84 | 65.55 | 85.84 | | 83.21 |
| 7 | West-east mesic | 102.35 | 98.02 | 63.95 | 61.28 | 80.81 | | 77.56 |
| 15 | East only mesic | 103.22 | 100.21 | 64.73 | 62.56 | 81.79 | | 79.53 |
| 8 | *Sauvagesinella +Tesserodon +Copreocus +Monteithocanthon* | 93.85 | 90.23 | 58.48 | 56.38 | 73.95 | | 71.37 |
| 9 | *Tesserodon+ Coproceus* | 42.15 | 40.98 | 26.21 | 25.43 | 33.12 | | 32.39 |
| 10 | *Monteithocanthon* | 76.19 | 74.23 | 47.2 | 46.25 | 60.12 | | 58.79 |
| 11 | *Sauvagesinella* | 61 | 59.4 | 37.99 | 36.84 | 48.69 | | 46.57 |
| 12 | *Aptenocanthon + Matthewsius* | 93.01 | 91.76 | 58.05 | 57.4 | 73.38 | 72.45 | |
| 13 | *Aptenocanthon*  in part | 27.67 | 26.51 | 17.4 | 17.14 | 22.3 | | 21.91 |
| 14 | *Matthewsius* | 69.75 | 68.45 | 43.51 | 42.75 | 55.11 | | 54.09 |
| 17 | *Monoplistes + Canthonosoma + Cephalodesmius* | 89.63 | 87.17 | 56.18 | 54.59 | 70.91 | | 69.26 |
| *18* | *Monoplistes* | 61.73 | 60.89 | 38.68 | 37.86 | 48.92 | | 48.145 |
| 19 | *Canthonosoma + Cepahalodesmius* | 73.4 | 71.61 | 46 | 44.93 | 58.25 | | 56.85 |
| 20 | *Cephalodesmius* | 65.28 | 63.45 | 40.77 | 39.71 | 51.67 | | 50.5 |
| 21 | *Temnoplectron* | 79.98 | 71.58 | 49.68 | 44.85 | 62.82 | | 56.91 |
| 22 | *Coptodactyla + Amphistomus* | 66.74 | 66.41 | 41.73 | 41.57 | 52.73 | | 52.65 |
| 23 | *Amphistomus* | 51.05 | 50.24 | 31.9 | 31.4 | 40.33 | | 39.79 |
| 24 | NZ + NCal + Pseudignambia + Diorgygopyx | 85.86 | 82.96 | 53.33 | 51.86 | 67.62 | | 65.96 |
| 25 | *Demarziella* | 52.59 | 54.69 | 32.93 | 34.43 | 41.89 | | 43.87 |
| 27 | *Pseudignambia* | 52.52 | 50.79 | 32.78 | 31.75 | 41.18 | | 40.46 |
| 30 | *Diorygopyx* | 31.68 | 30.68 | 19.74 | 19.16 | 24.91 | | 24.31 |
| 32 | *Lepanus* | 105.77 | 102.63 | 65.95 | 64.1 | 83.49 | | 81.36 |
| 33 | *Lepanus* (minus *occidentalis*) | 95.36 | 92.45 | 59.34 | 57.63 | 74.87 | | 73.21 |
| 34 | *Lepanus* monsoon clade | 72.78 | 70.69 | 45.34 | 44.1 | 57.31 | | 56.08 |