

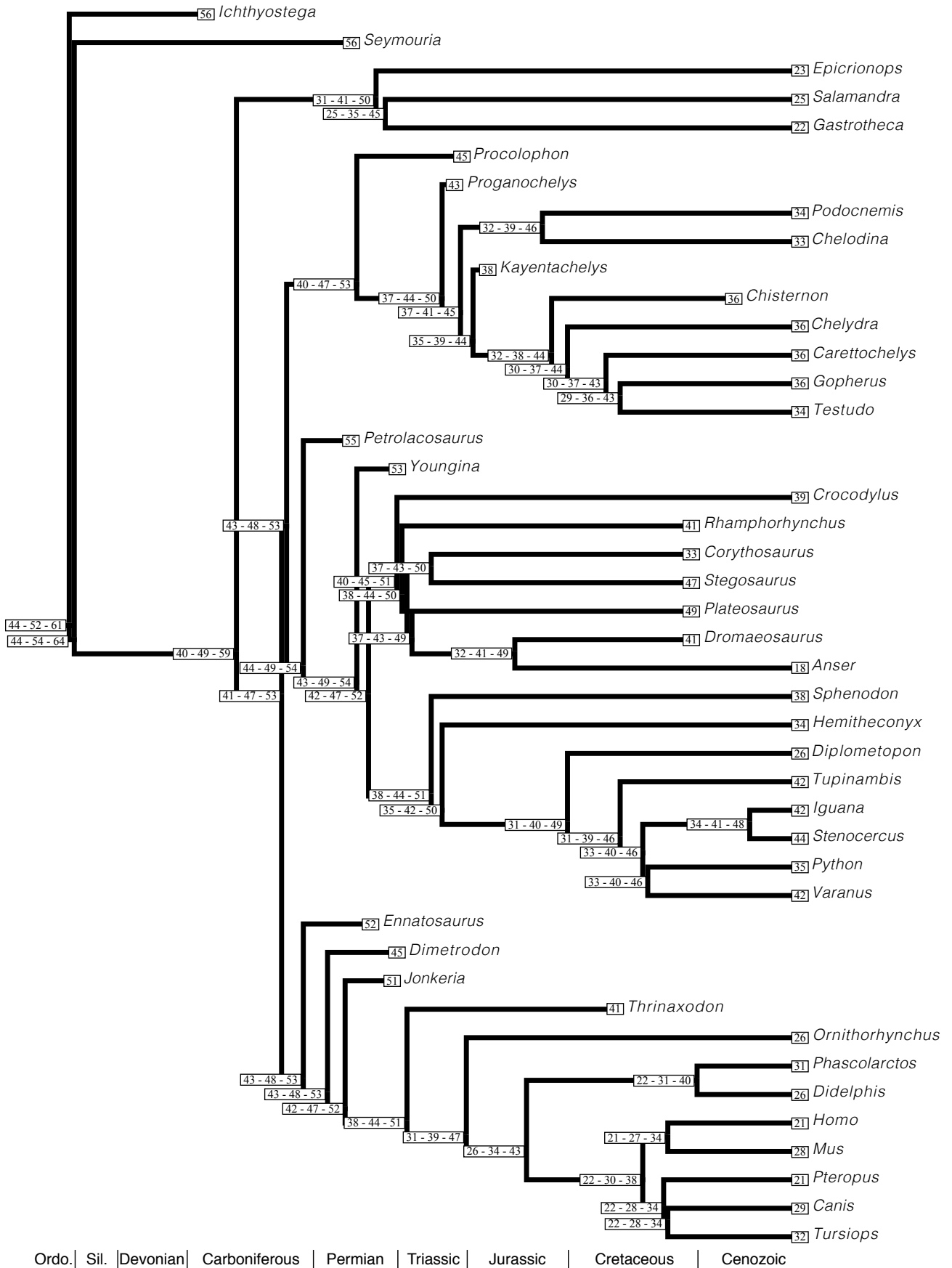
SUPPLEMENTARY MATERIALS

We studied the evolution of the skull bone number and complexity estimates in our sample by a squared-change parsimony optimization (Maddison 1991) on our calibrated phylogeny (see Fig. 2 in the text). Parsimony optimization renders estimation values for the root of the tree. The confidence intervals 95% (CI) for the root node values were generated using independent contrasts (Midford et al. 2003). To obtain the CI of internal nodes we re-rooted the tree on each of the branches as described in Laurin (2004). This analysis was performed in Mesquite.

Supplementary Figures 1–6 show the values and CI of the parsimony optimization on the phylogeny.

Supplementary References

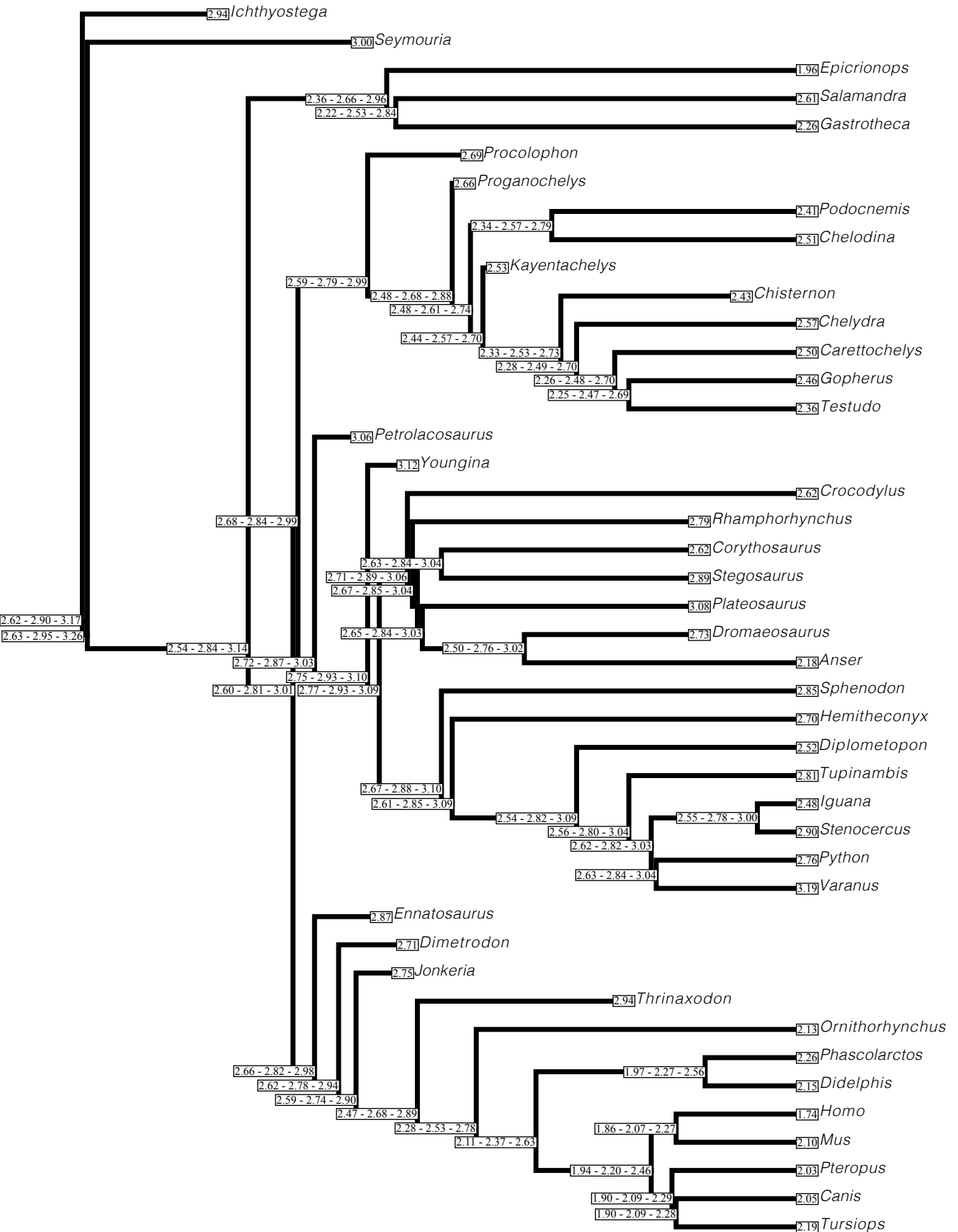
- Maddison, W. P. (1991). Squared-change parsimony reconstructions of ancestral states for continuous-valued characters on a phylogenetic tree. *Systematic Zoology* 40:304-314.
- Midford, P. E., Garland Jr. T. & Maddison W. P. (2003). PDAP Package for Mesquite.
- Laurin, M. (2004). The evolution of body size, Cope's Rule and the origin of amniotes. *Systematic Biology* 53:594-622.



Supplementary Figure 1. Parsimony optimization and CI 95% for the Number of Bones

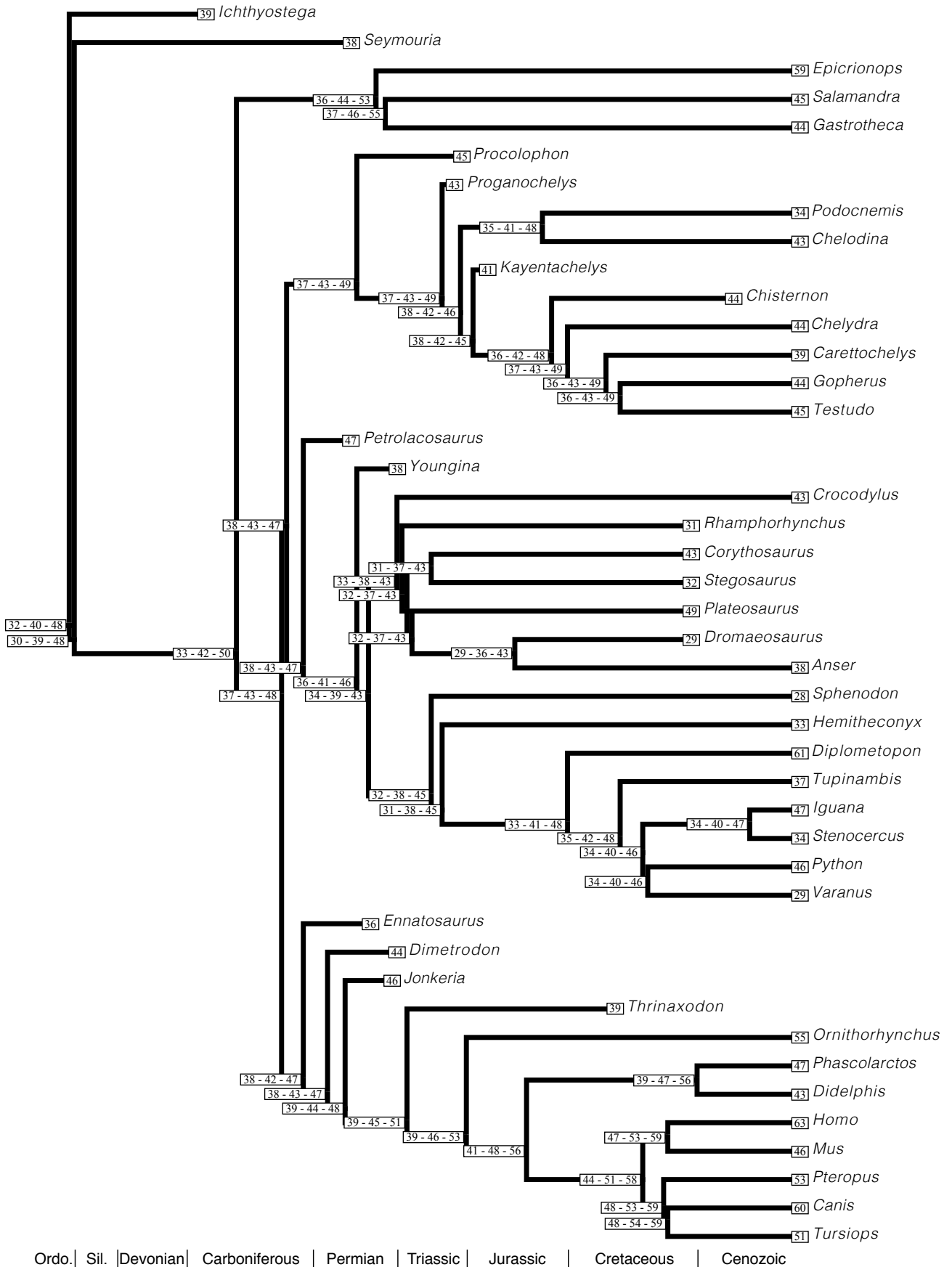


Supplementary Figure 2. Parsimony optimization and CI 95% for the Density (%)

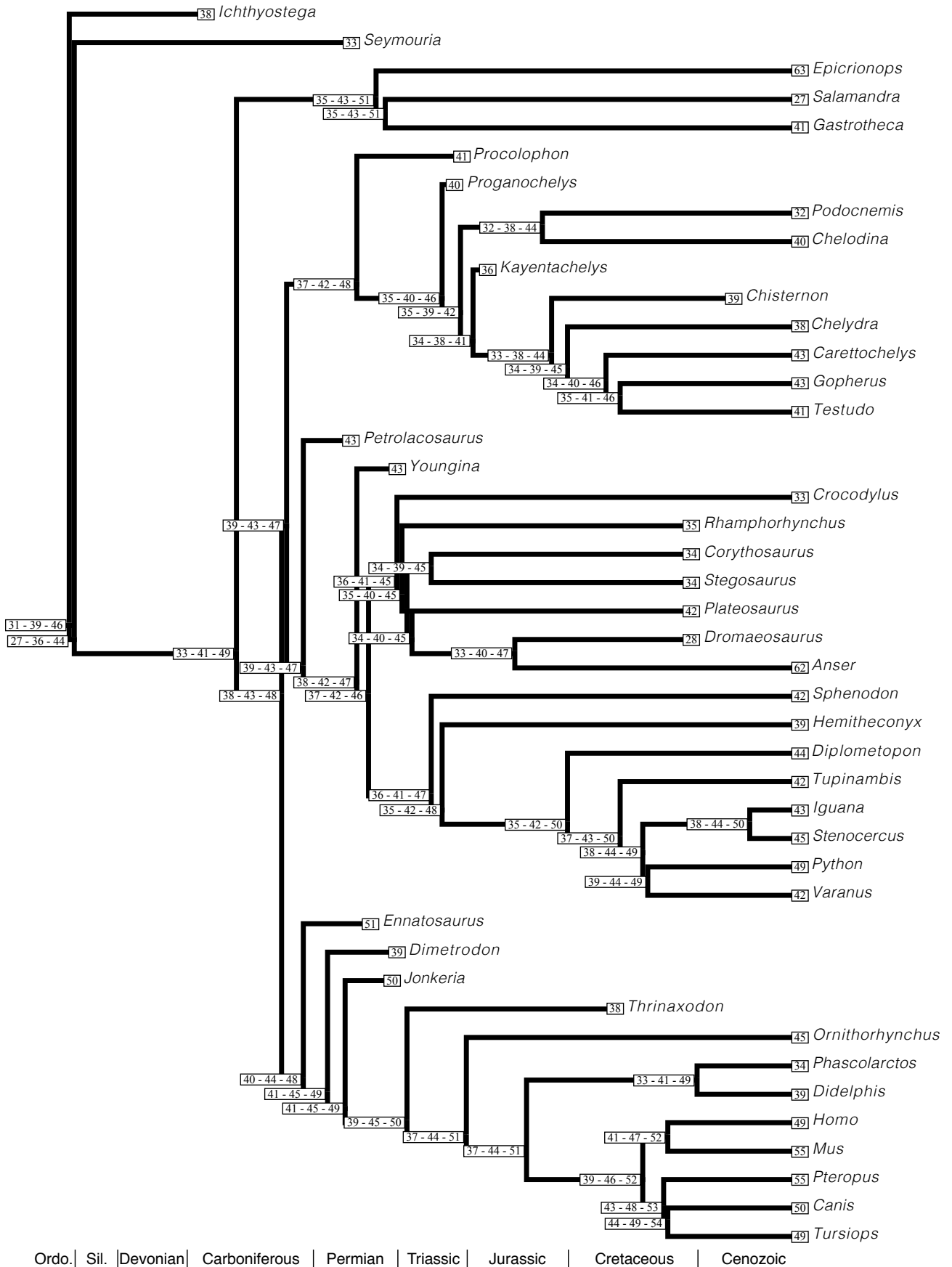


Ordo | Sil. | Devonian | Carboniferous | Permian | Triassic | Jurassic | Cretaceous | Cenozoic

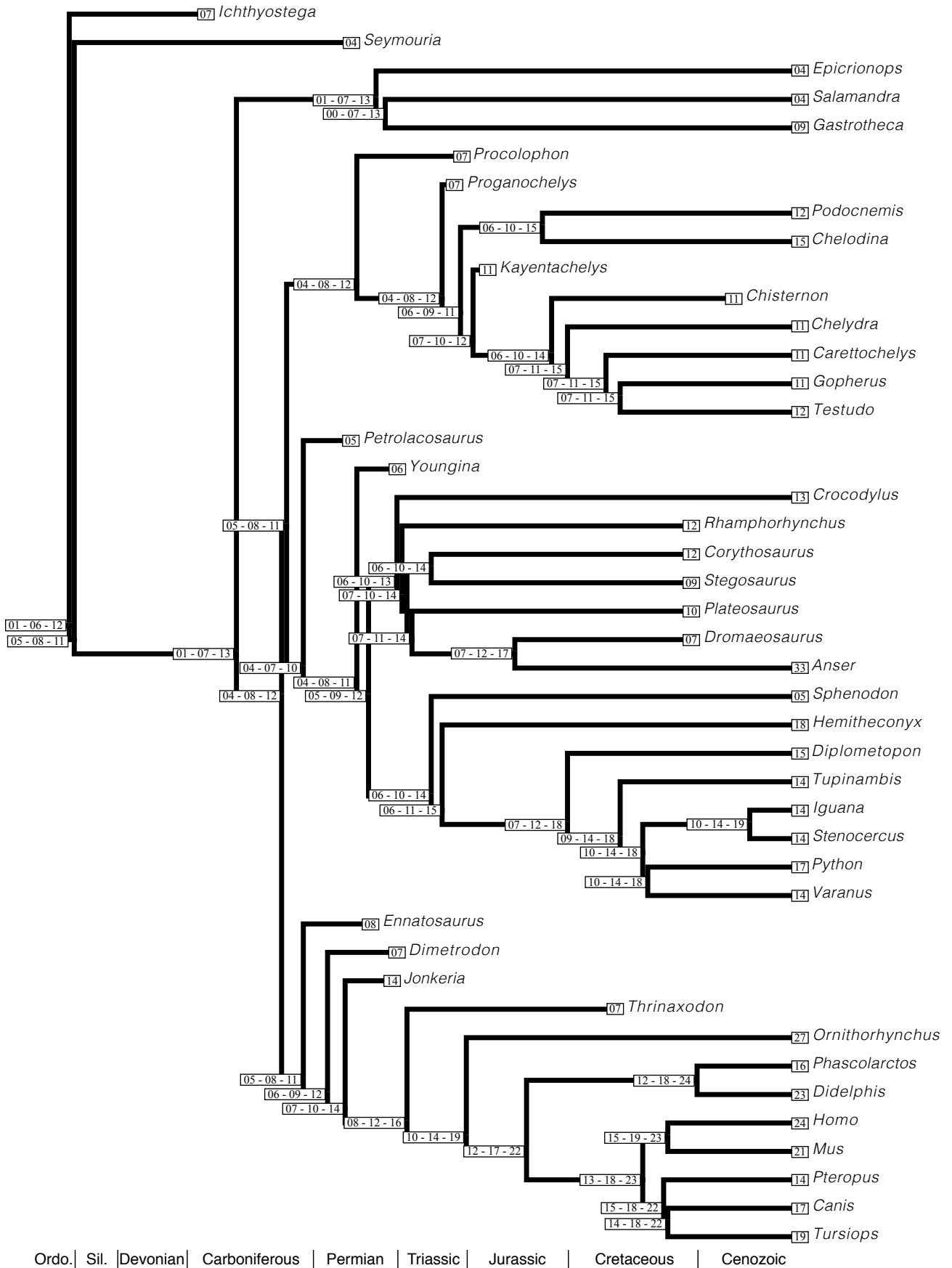
Supplementary Figure 3. Parsimony optimization and CI 95% for the Characteristic Path Length



Supplementary Figure 4. Parsimony optimization and CI 95% for the Clustering Coefficient (%)



Supplementary Figure 5. Parsimony optimization and CI 95% for Heterogeneity (%)



Supplementary Figure 6. Parsimony optimization and CI 95% for the Unpaired Bone Ratio (%)