

## S2 APPENDIX. CALIBRATION POINTS

- 1- The split between *Podarcis pityusensis* and *P. lilfordi* during the Messinian Salinity Crisis. Normal distribution, mean: 5.32, stdev: 0.05 (Carranza and Arnold, 2012; Tamar et al., 2016).
- 2- The split between the Asian *Naja* clade and its African sister clade dates back to a minimum age of 16 my based on the presence of characteristic apomorphies of the Asian clade in the fossil record (Szyndlar and Rage, 1990; Wüster et al., 2008). Lognormal distribution, offset: 16, mean: 1, stdev: 1.
- 3- Fossil evidence suggests that the initial divergence of the Eurasian viper clade (excluding *Pseudocerastes* and *Eristicophis*) had begun by 20 my (Szyndlar and Rage, 1999). Lognormal distribution, offset: 20, mean: 1, stdev: 1.
- 4- The initial divergence of three South American populations of the Neotropical pitviper genus *Porthidium*, which almost certainly invaded South America and diverged there after the uplift of the Isthmus of Panamá, approximately 3.5 my (Wüster et al., 2002). Normal distribution, mean: 3.5, stdev: 1.
- 5- The fossil *Tuberculacerata* from the Medicine Pole Hills in the Chadronian Formation (33.9-38 Ma) of North Dakota (Smith, 2006) was used to calibrate the node defining crown Phrynosomatidae at approximately 36 my (Smith 2006 suggests the fossils are mid-Chadronian in age). Lognormal distribution, offset: 32.4, mean: 1.2, stdev: 1.4.
- 6- The split between *Phelsuma ornata* from Mauritius and *Phelsuma inexpectata* from Reunion islands. This event was set to a soft maximum of 8.9 my based on the age of the oldest rocks of Mauritius, the oldest island in the Mascarenes (Moore et al., 2011). The prior was set by an Exponential distribution, offset: 0, mean: 3.
- 7- The initiation of the diplodactyloid radiation in New Caledonia was placed as a soft maximum of 37 my, because geological and biological data show that the island was probably under water until this time (Garcia-Porta and Ord, 2013; Nattier et al., 2011; Papadopoulou et al., 2013; Pillon, 2012). A Normal distribution, mean: 20 Ma, stdev: 10
- 8- The divergence between Hydrosaurinae and Amphibolurinae from Agaminae and Draconinae during the Late Cretaceous. Normal distribution, mean: 70, stdev: 3.5 (Amer and Kumazawa, 2005; Townsend et al., 2011).
- 9- The split between *Gallotia* and *Psammodromus*, coinciding with the age of the oldest islands Fuerteventura and Lanzarote. Normal Distribution, mean: 18, stdev: 2 (Carranza and Arnold, 2012; Tamar et al., 2016).
- 10- The stem amphisbaenian *Hodzhhakulia* (Gao and Nesson, 1998) from the Aptian-Albian boundary ( $112 \pm 1.0$  my) was used to calibrate the node defining Lacertibaenia (Amphisbaenia and Lacertidae). Lognormal distribution, offset: 110, mean: 1.8, stdev: 1.3.
- 11- The stem scincomorph *Balnealacerta* (Evans, 1998) from the Middle Jurassic ( $164.7 \pm 4.0$  my) was used to calibrate the node defining Unidentata (all squamates except Gekkota and Dibamidae). We note that Scincomorpha is traditionally defined to encompass Scincidae, Cordylidae, Xantusiidae, Teiidae, Gymnophthalmidae, and Lacertidae, which is a paraphyletic assemblage in our tree. There is some disagreement amongst morphologists/paleontologists as to which subgroup(s) among these taxa *Balnealacerta* and other “scincomorphs” from the same site are more closely related to. From the possible alternatives, we chose the deepest (i.e., more conservative in terms of pushing divergence dates further into the past) node for our calibration point. Lognormal distribution, offset: 161, mean: 1.8, stdev: 1.
- 12- The oldest known rhynchocephalians (Evans et al., 2001; Sues and Olsen, 1990) from the Ladinian-Carnian boundary ( $228 \pm 2.0$  my) were used to calibrate the node defining Lepidosauria

(Rhynchocephalia, represented by *Sphenodon punctatus*, and Squamata, all other sampled taxa). Lognormal distribution, offset: 224, mean: 2.6, stdev: 1.2.

13- The divergence of Leiolepidinae from the remaining agamids during the Late Cretaceous. Normal distribution, mean: 82, stdev: 3.5 (Amer and Kumazawa, 2005; Townsend et al., 2011; Wiens et al., 2006).

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