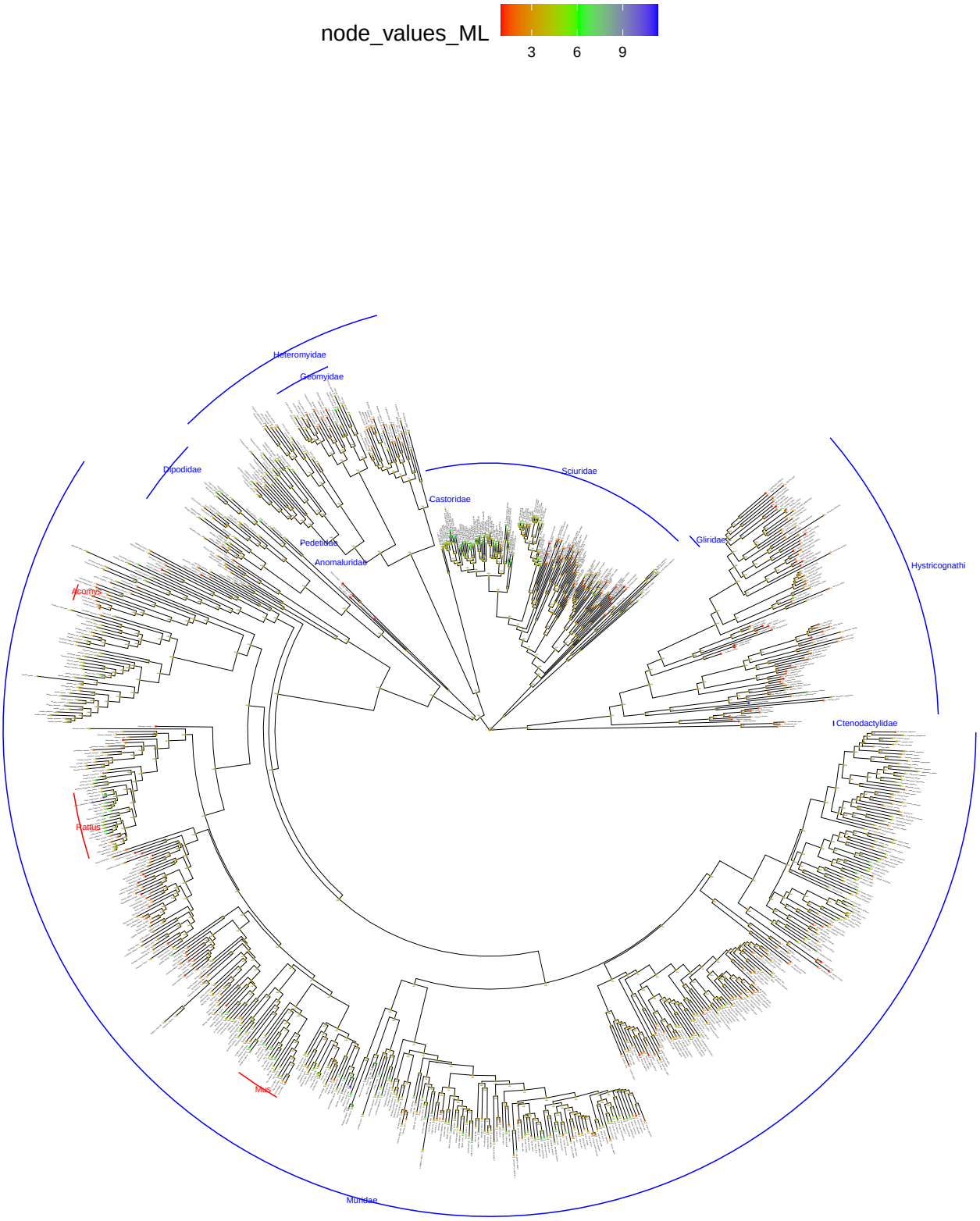
E&EB 354 Final Project – Possibility of Rodent Litter Size as a Predictor for Menstruation

```
## Warning in sqrt(diag(solve(h))): NaNs produced
```



Metadata about ML reconstruction:

Residual log-likelihood:

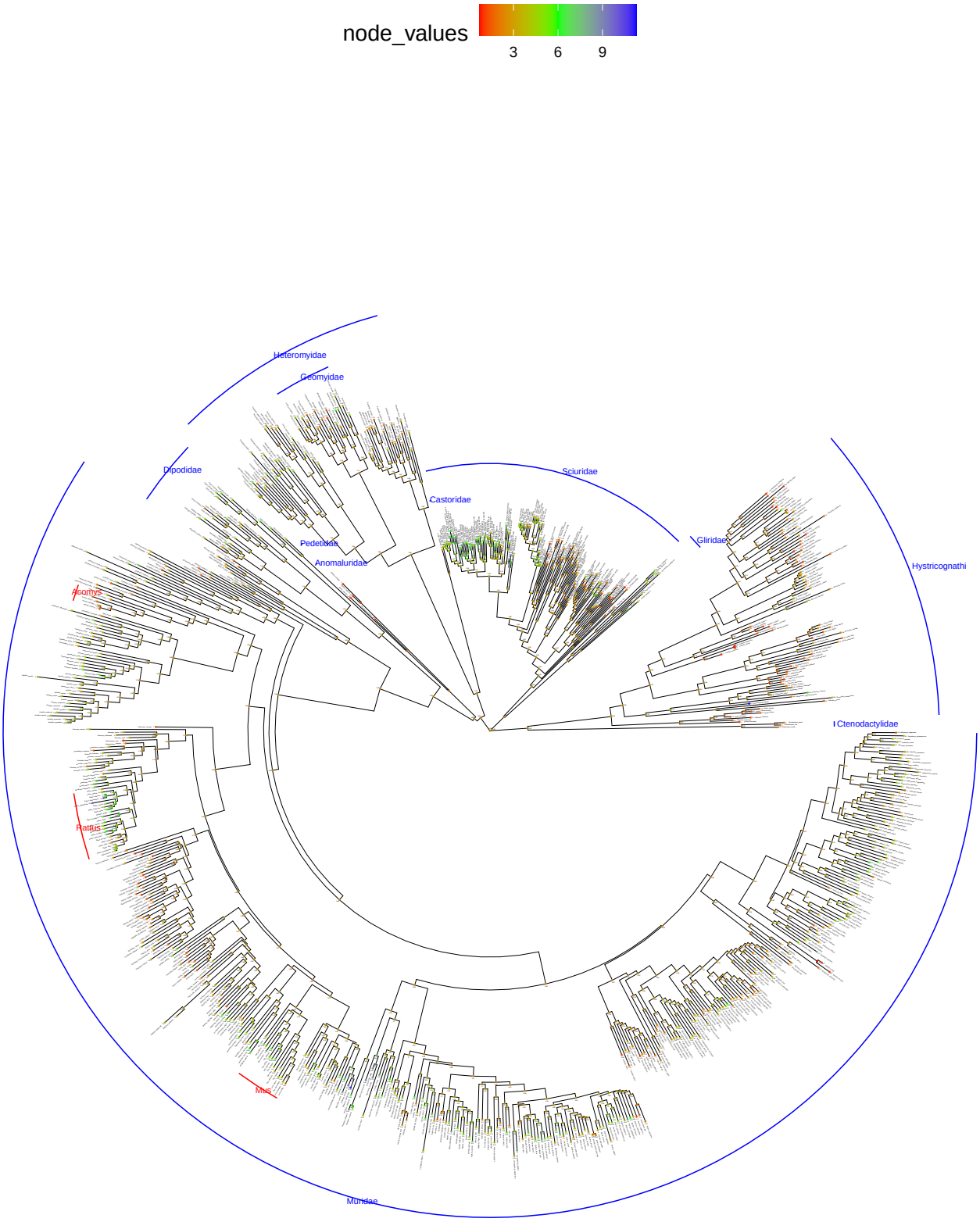
Sigma2: 39.7523645, NaN

CI95:

Table 1: sample ML confidence interval

	lower bound	upper bound
820	1.640912	5.569241
821	1.654606	5.555528
822	1.163133	6.046221
823	1.577236	5.630586
824	1.729779	5.480501
825	1.913126	5.296268
826	1.928765	5.270549
827	1.827166	4.456771
828	1.272778	1.908321
829	1.838788	5.368857

```
## Warning in sqrt(1/out$hessian): NaNs produced
```



Metadata about REML reconstruction:

- `$sigma2` is the estimate of the Brownian Motion parameter.
- `$CI95` are the confidence intervals on the ancestral character state reconstructions.

Residual log-likelihood: -5664.2874262

Sigma2: 997.3621519, NaN

CI95:

Table 2: sample REML confidence interval

	lower bound	upper bound
820	-11.170629	16.942259
821	-11.075762	16.847165
822	-14.542507	20.307337
823	-11.577820	17.328727
824	-10.482808	16.261825
825	-9.168933	14.914383
826	-9.050760	14.727896
827	-7.636693	11.102322
828	-1.464976	3.070575
829	-9.671487	15.420109

Ancestral Reconstruction using Phylogenetic Independent Contrast

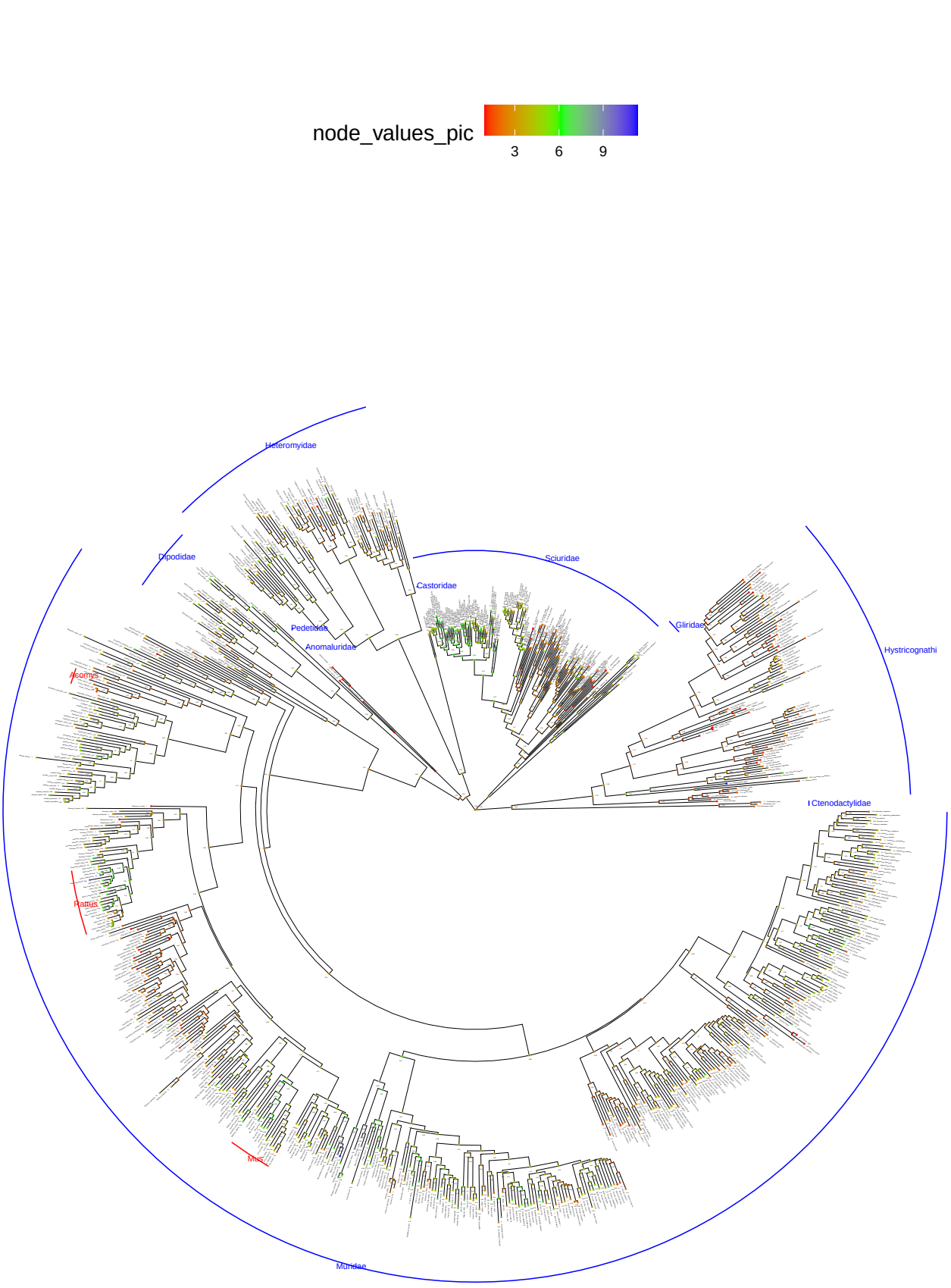
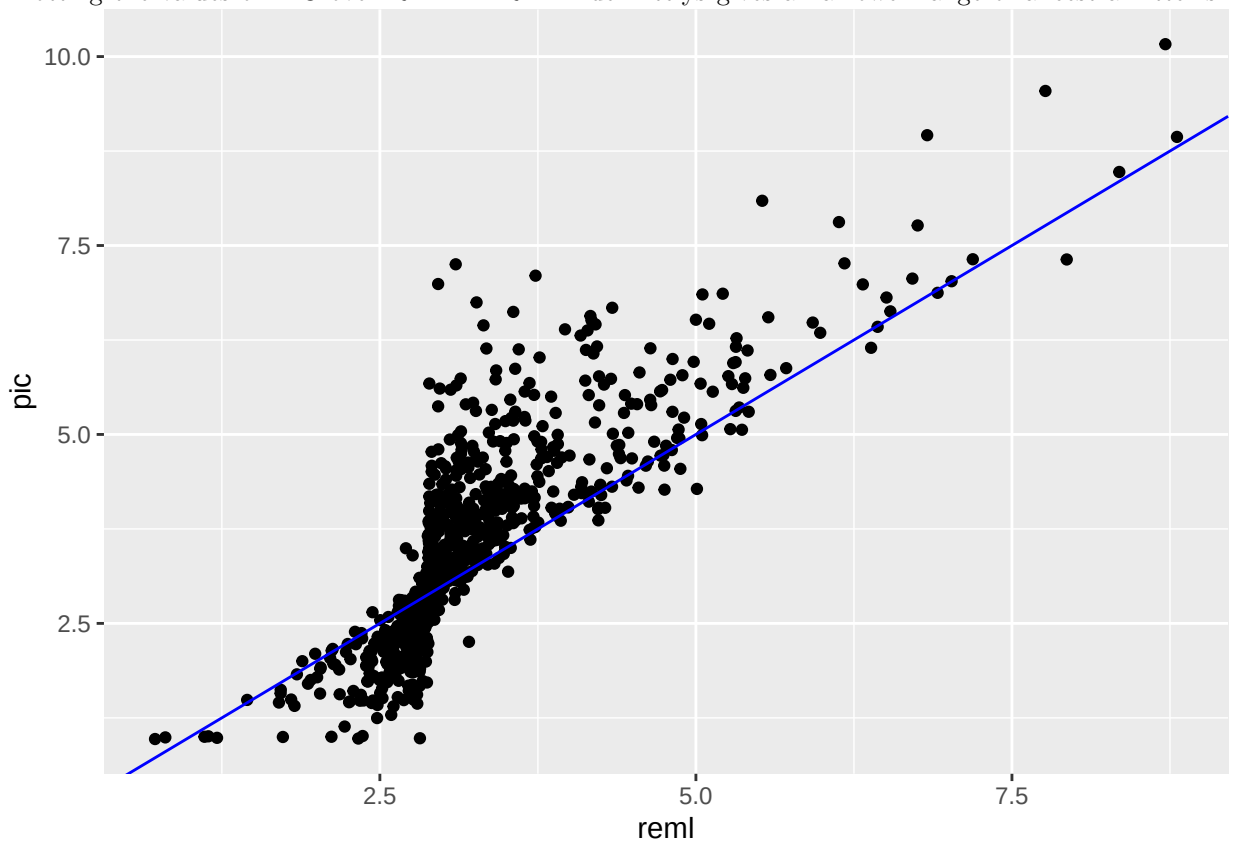

node_values_pic
3
6
9
Heteromyidae
Dipodidae
Sciuridae
Castoridae
Gliridae
Pedetidae
Anomaluridae
Hystricognathi
Acomys
Ctenodactylidae
Rattus
Mus
Muridae

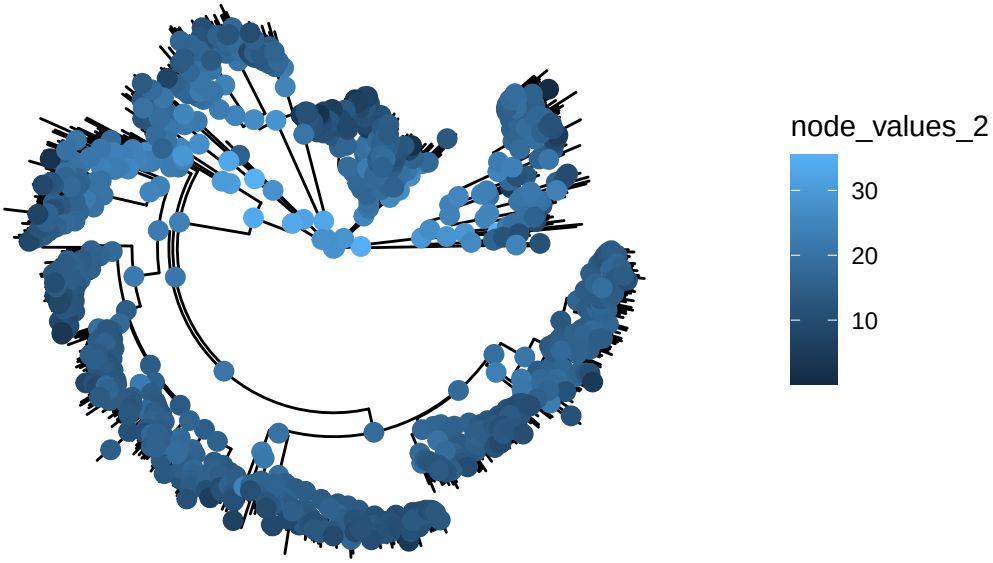
Table 3: sample PIC confidence interval

	lower bound	upper bound
820	2.0001156	3.771613
821	1.8748948	4.297813
822	0.8110138	4.270835
823	1.7176718	3.872031
824	2.4806467	4.499565
825	0.7682447	2.667815
826	0.7397868	2.736672
827	0.3333333	1.660659
828	0.8454750	1.137609
829	1.1800702	3.378577

Plotting the values of PIC over REML – RMEL definitelys gives a narrower range of ancestral litter size.



Plotting the confidence interval on the tree – the further back in time, the larger the CI. REML



PIC