

## Supplementary Materials

Supplementary Table S1. Accession numbers for molecular markers used.

Supplementary Table S2. Unsourced species for eBird/Clements 2021.

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Supplementary Table S4. Photo credits for graphical abstract.

Supplementary Figure S1. Concatenated ML tree based on mitochondrial loci.

Supplementary Figure S2. Concatenated ML tree based on nuclear loci.

Supplementary Figure S3. Concatenated Bayesian tree based on mitochondrial loci.

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Supplementary Figure S5-S32. Gene trees.

Supplementary Figure S33. Divergence time in million years ago (Mya) estimated by TreePL.

Supplementary Figure S34. Concatenated Bayesian tree based on all loci for clade A1 (Muscicapini).

Supplementary Table S1. Accession numbers for nucleotide sequences used in this study. Nucleotides that were directly downloaded from GenBank or BOLD systems are marked as “1” or “BOLD” in the first tab, and their corresponding accession numbers are shown in the second tab. If a locus was extracted from a genome assembly, mitochondrion genome, or sequences reads from the Sequence Read Archive, they are marked as “genome”, “mt” or “SRA” respectively in the first tab, and their accession numbers are given in the third, fourth and fifth tab. Sequences produced by this study are marked as “New”, and their corresponding GenBank accessions can be found in the sixth tab “New sequences”.

See attached Excel sheet.

Supplementary Table S2. Species unsampled for Clements/eBird checklist 2021 and their IUCN conservation status and geographical range.

Species unsampled for Clements/eBird 2021	IUCN Status	Distribution
<i>Muscicapa randi</i>	VU	Philippines
<i>Muscicapa segregata</i>	NT	Sumba
<i>Muscicapa williamsoni</i>	Not evaluated	Borneo
<i>Muscicapa epulata</i>	LC	Africa
<i>Melaenornis annamarulae</i>	VU	Africa
<i>Copsychus albigentris</i>	LC	Andaman Is.
<i>Cyornis sanfordi</i>	EN	Sulawesi
<i>Cyornis hoevelli</i>	LC	Sulawesi
<i>Cyornis hyacinthinus</i>	LC	Lesser Sundas
<i>Cyornis ruckii</i>	CR	Sumatra
<i>Cyornis sumatrensis</i>	LC	Indochinese Peninsula
<i>Cyornis brunneatus</i>	VU	S China; Malay Peninsula
<i>Cyornis nicobaricus</i>	NT	Nicobar Is.
<i>Cyornis oscillans</i>	Not evaluated	Lesser Sundas
<i>Niltava sumatrana</i>	LC	Malay Peninsula; Sumatra
<i>Eumyias sordidus</i>	NT	Sri Lanka
<i>Cossypha heinrichi</i>	LC	Africa
<i>Cichladusa ruficauda</i>	LC	Africa
<i>Vauriella albigularis</i>	EN	Philippines
<i>Myophonus blighi</i>	EN	Sri Lanka
<i>Myophonus robinsoni</i>	NT	Malay Peninsula
<i>Myophonus horsfieldii</i>	LC	India
<i>Ficedula henrici</i>	NT	Damar Island
<i>Ficedula bonthaina</i>	EN	Sulawesi
<i>Saxicola macrorhynchus</i>	VU	India

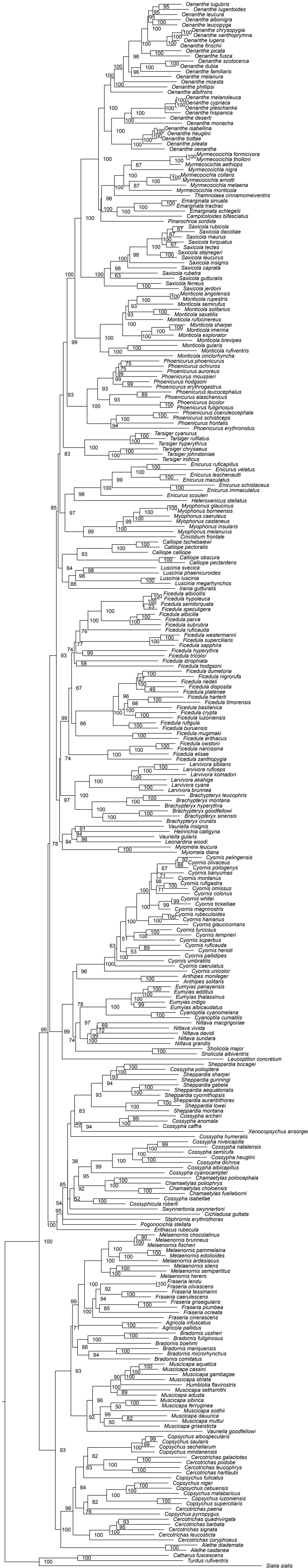
Supplementary Table S3. Unsourced subspecies for Clements/eBird checklist 2021 which are treated as species in the IOC 12.1 checklist.

Subspecies unsampled for Clements/eBird 2021	Taxon name in IOC 12.1
<i>Copsychus malabaricus stricklandii</i>	<i>Copsychus stricklandii</i>
<i>Cyornis omissus djampeanus</i>	<i>Cyornis djampeanus</i>
<i>Cyornis ruficauda ocularis</i>	<i>Cyornis ocularis</i>
<i>Cyornis ruficauda ruficrissa</i>	<i>Cyornis ruficrissa</i>
<i>Cyornis oscillans stresemanni</i>	<i>Cyornis stresemanni</i>
<i>Enicurus leschenaulti borneensis</i>	<i>Enicurus borneensis</i>
<i>Larvivora komadori namiyei</i>	<i>Larvivora namiyei</i>
<i>Fraseria lendu itombwensis</i>	<i>Muscicapa itombwensis</i>
<i>Muscicapa striata tyrrhenica</i>	<i>Muscicapa tyrrhenica</i>
<i>Myiomela diana sumatrana</i>	<i>Myiomela sumatrana</i>
<i>Niltava vivida oatesi</i>	<i>Niltava oatesi</i>
<i>Oenanthe lugens halophila</i>	<i>Oenanthe halophila</i>
<i>Oenanthe oenanthe seebohmi</i>	<i>Oenanthe seebohmi</i>
<i>Oenanthe lugens warriai</i>	<i>Oenanthe warriai</i>
<i>Saxicola torquatus sibilla</i>	<i>Saxicola sibilla</i>
<i>Sheppardia bocagei poensis</i>	<i>Sheppardia poensis</i>
<i>Thamnolaea cinnamomeiventris coronata</i>	<i>Thamnolaea coronata</i>

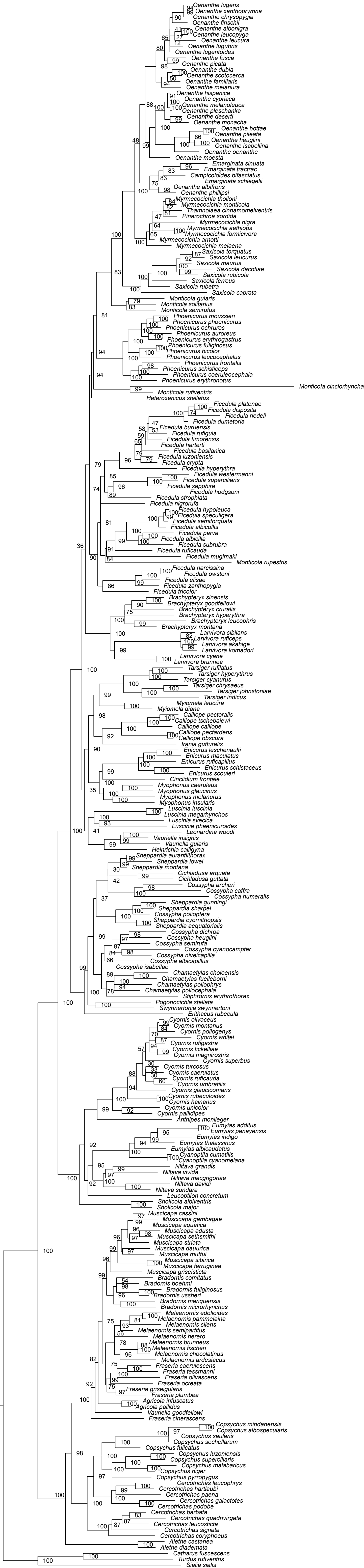
Supplementary Table S4. Photo credits which the bird paintings in the graphical abstract were drawn based on. Bird paintings were made by M.Z. in Procreate.

Species		Source	
<i>Oenanthe pileata</i>	Capped Wheatear	Macaulay Library ML81064951	Zak Pohlen
<i>Monticola saxatilis</i>	Rufous-tailed Rock-Thrush	ML351663591	Toni Ferrer
<i>Enicurus schistaceus</i>	Slaty-backed Forktail	ML379569191	Mike Rose
<i>Cossypha semirufa</i>	Rüppell's Robin-Chat	ML104604851	Roger Clark
<i>Muscicapa sibirica</i>	Dark-sided Flycatcher	ML93772671	Ed Thomas
<i>Ficedula zanthopygia</i>	Yellow-rumped Flycatcher	Yan Shen (pers. com.)	
<i>Cyornis glaucicomans</i>	Chinese Blue Flycatcher		
<i>Copsychus saularis</i>	Oriental Magpie-Robin		

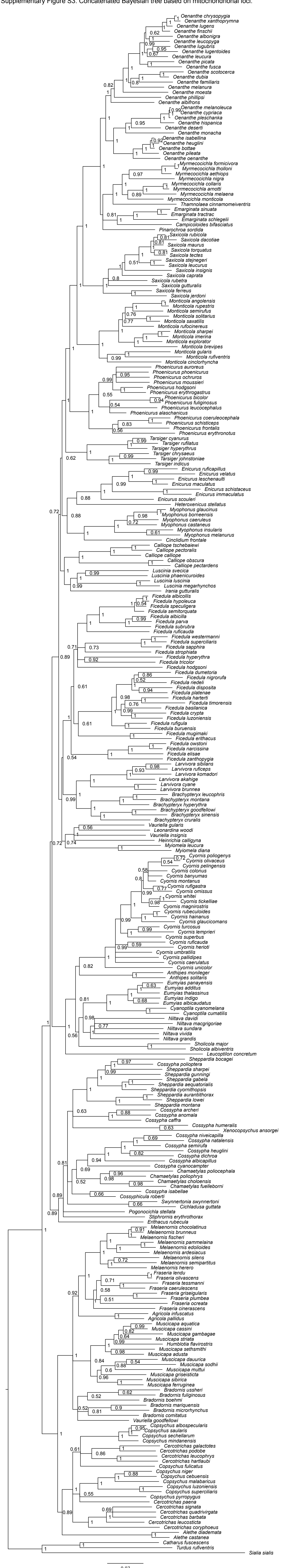
Supplementary Figure S1. Concatenated ML tree based on mitochondrial loci.



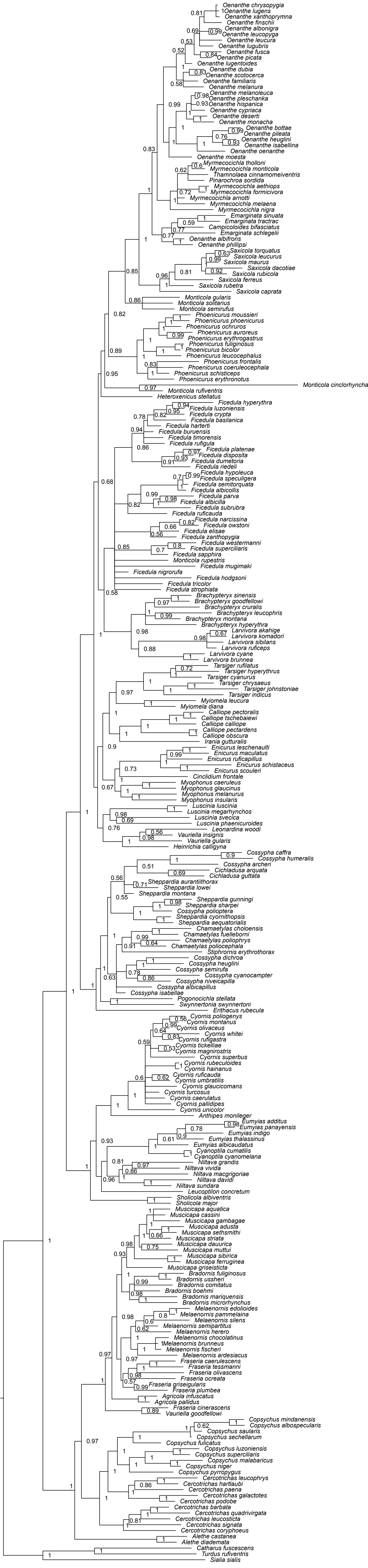
Supplementary Figure S2. Concatenated ML tree based on nuclear loci.



0.97 *Sialia sialis*

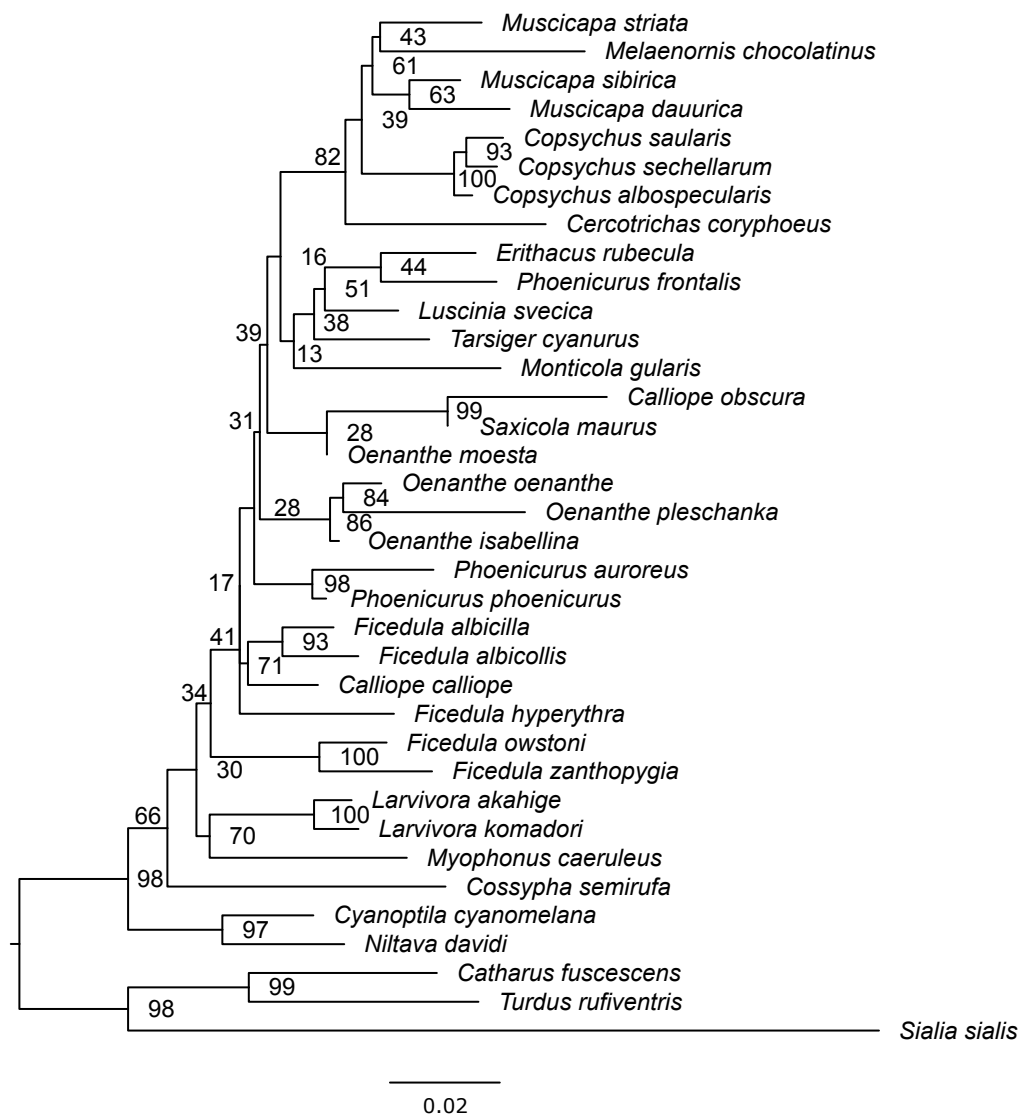


Supplementary Figure S4. Concatenated Bayesian tree based on nuclear loci.

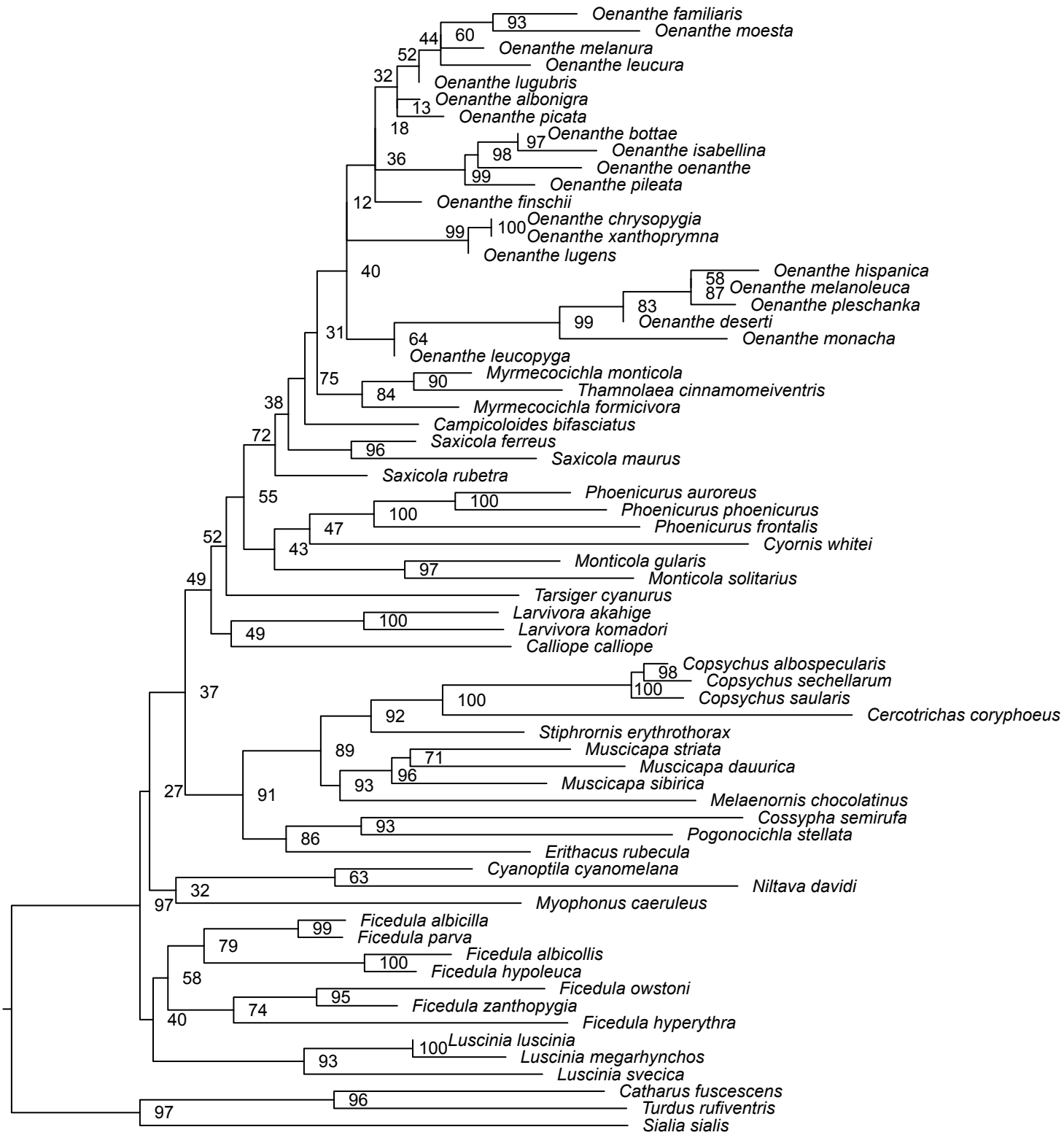




Supplementary Figure S5. Gene tree of 12Srrn estimated by IQTREE.

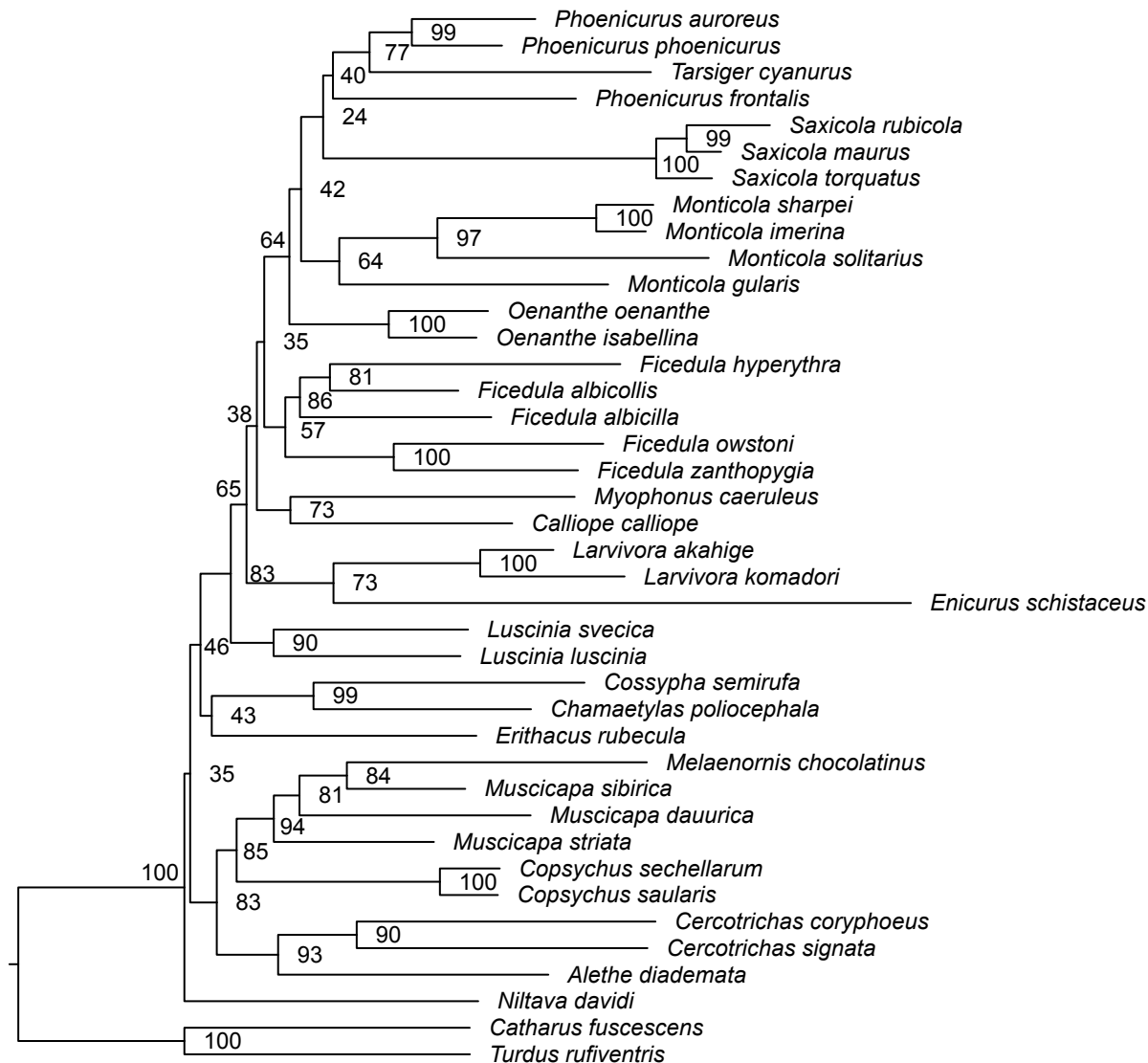


Supplementary Figure S6. Gene tree of 16Srrn estimated by IQTREE.



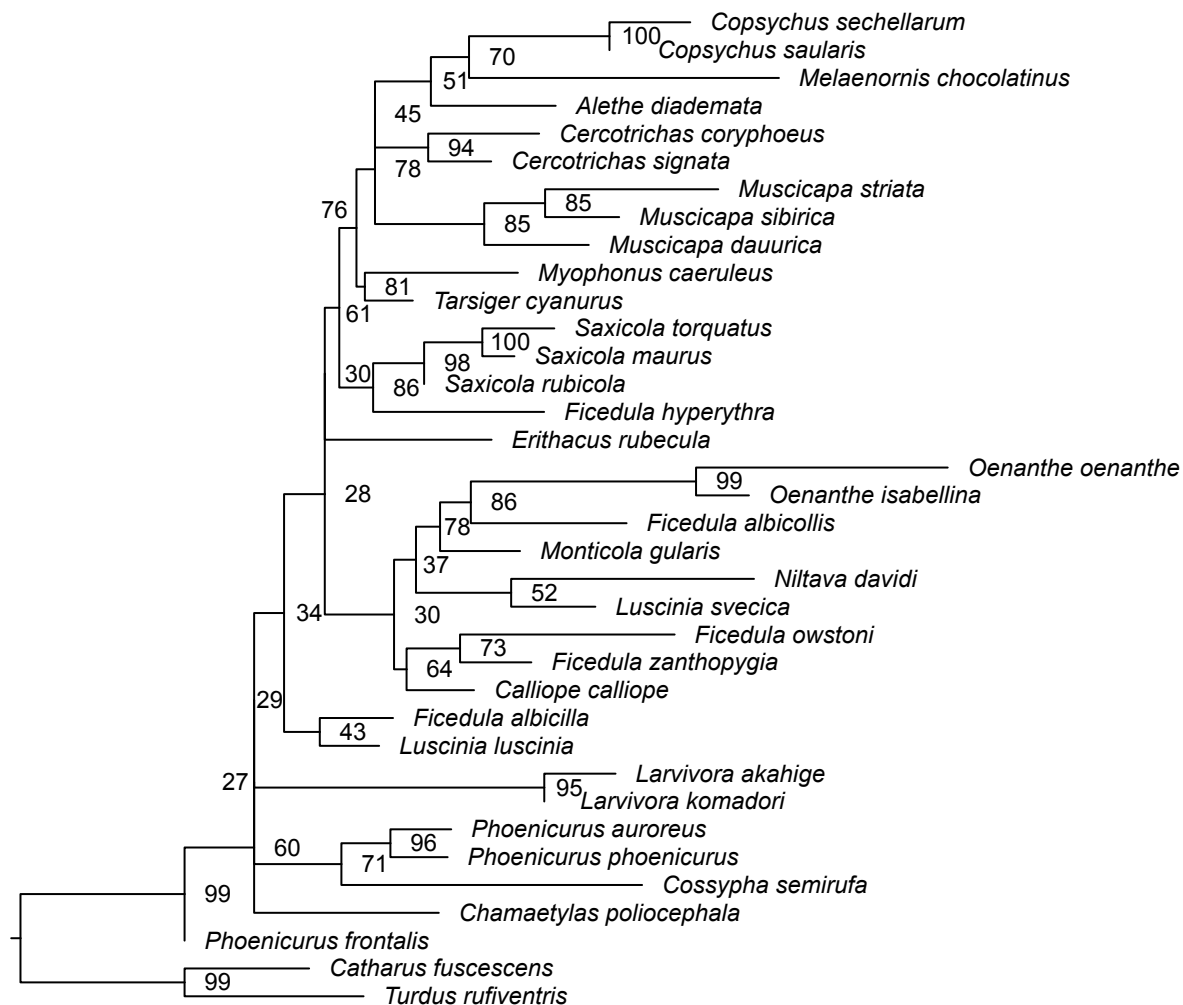
0.009

Supplementary Figure S7. Gene tree of ATP6 estimated by IQTREE.



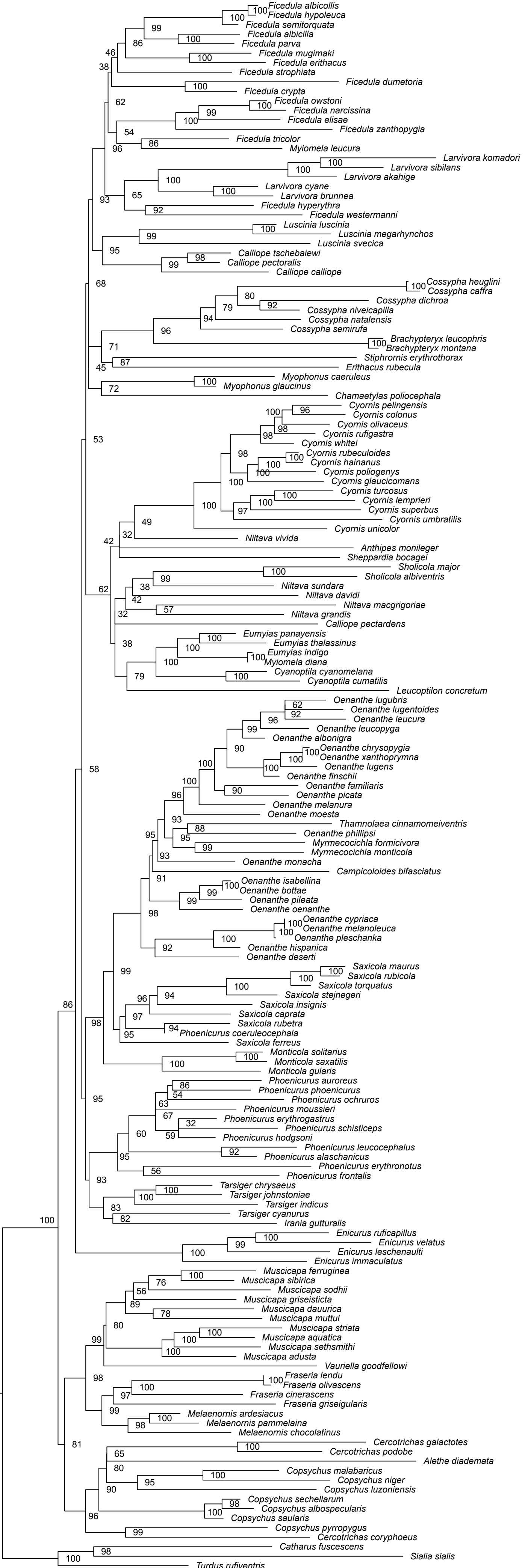
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Supplementary Figure S8. Gene tree of ATP8 estimated by IQTREE.

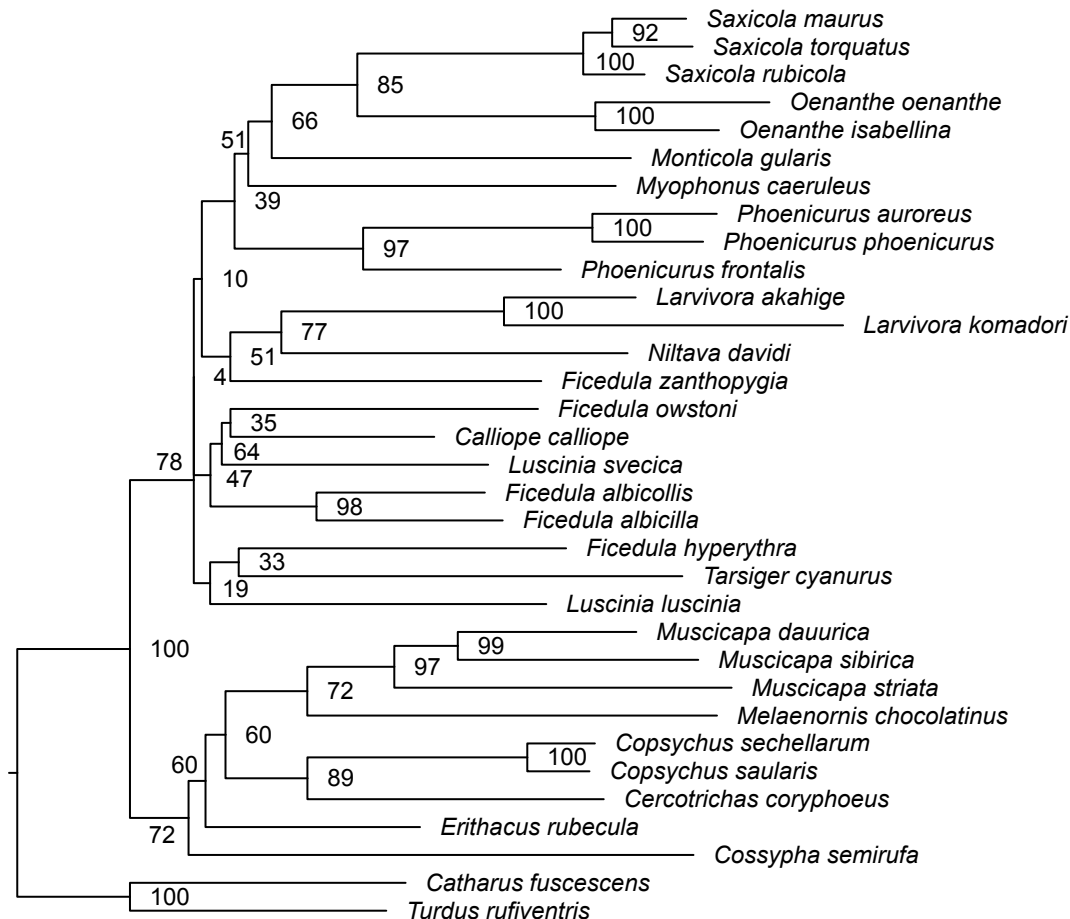


0.04

Supplementary Figure S9. Gene tree of COI estimated by IQTREE.

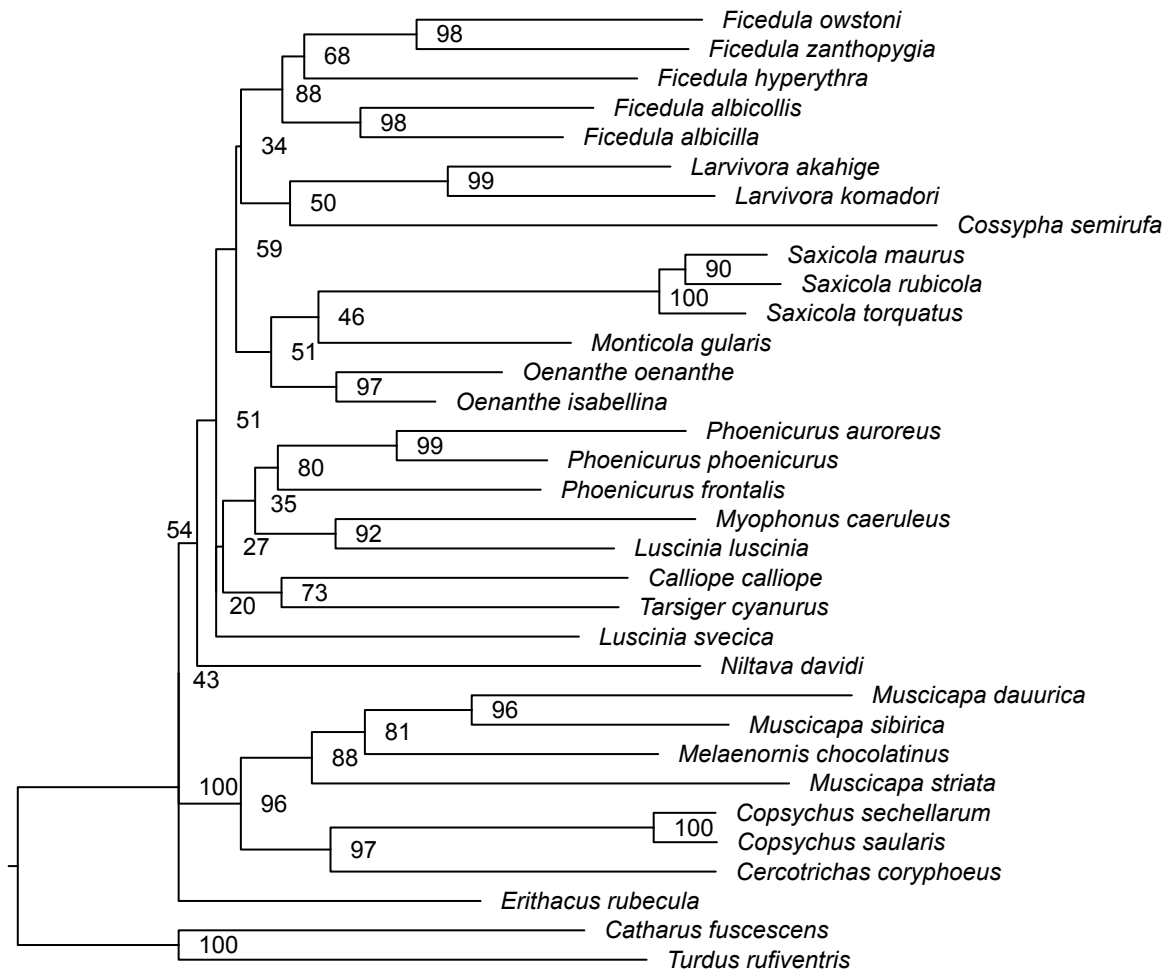


Supplementary Figure S10. Gene tree of COII estimated by IQTREE.



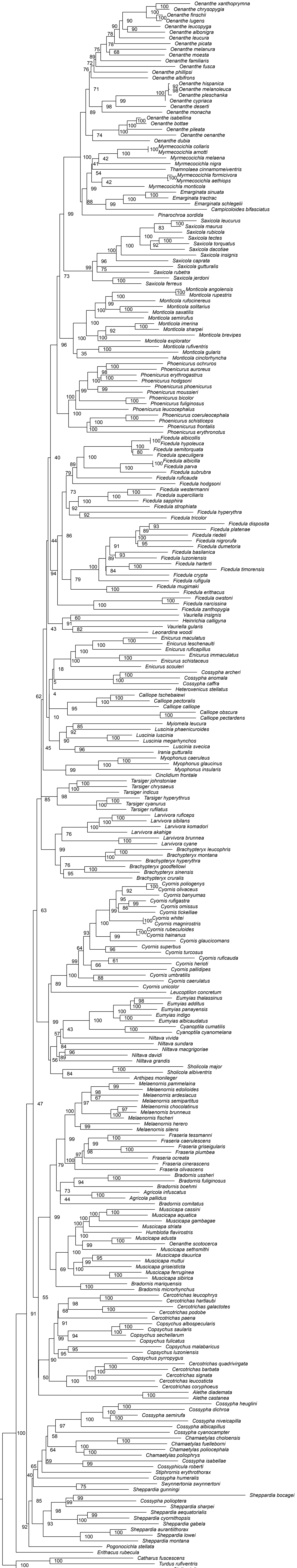
0.03

Supplementary Figure S11. Gene tree of CO3 estimated by IQTREE.



0.03

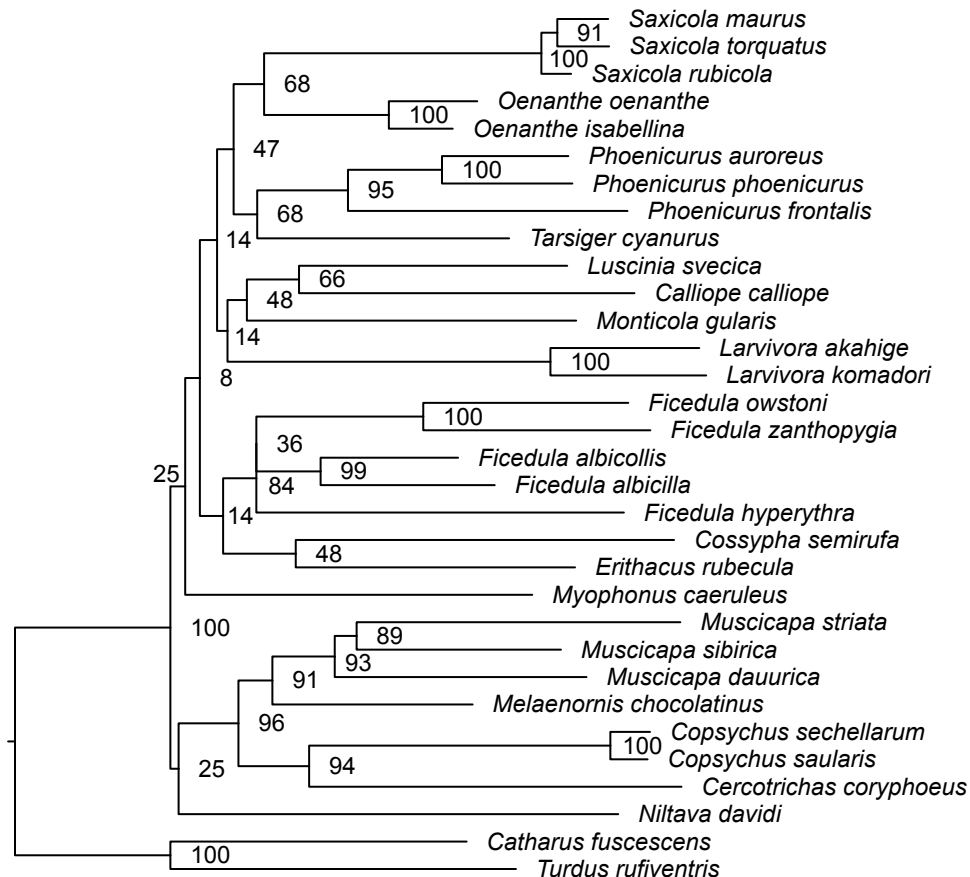
Supplementary Figure S12. Gene tree of Cytb estimated by IQTREE.



0.03

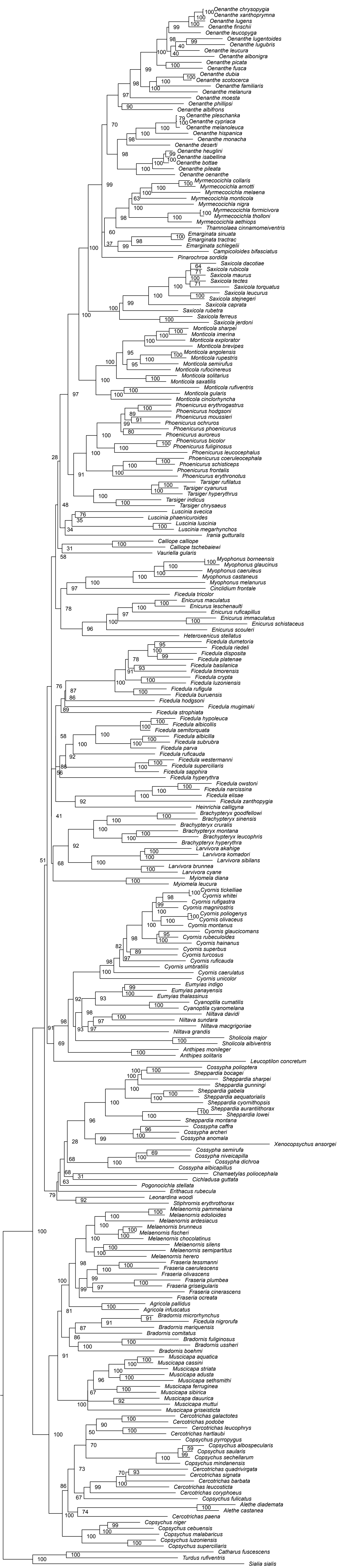


Supplementary Figure S13. Gene tree of ND1 estimated by IQTREE.



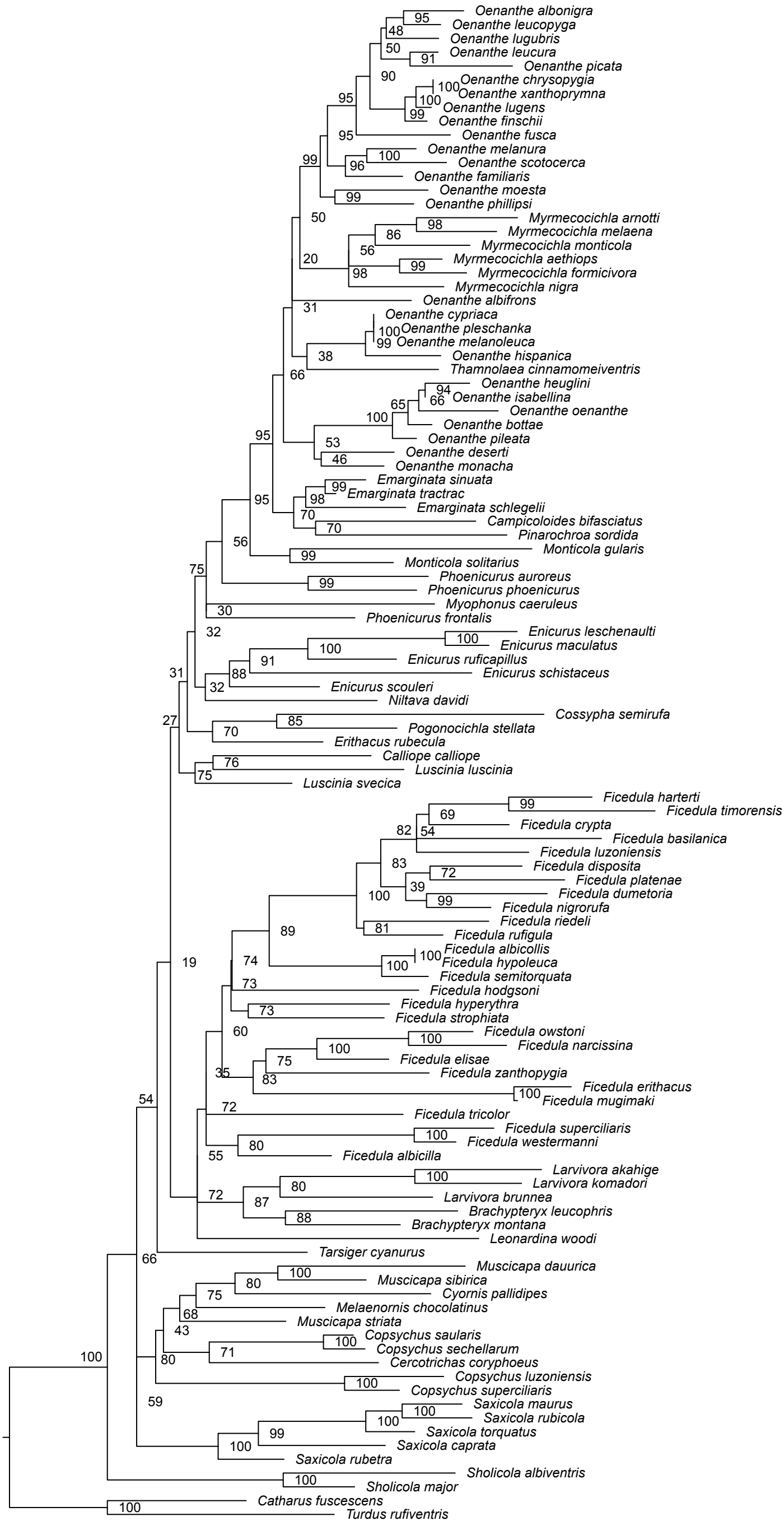
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Supplementary Figure S14. Gene tree of ND2 estimated by IQTREE.

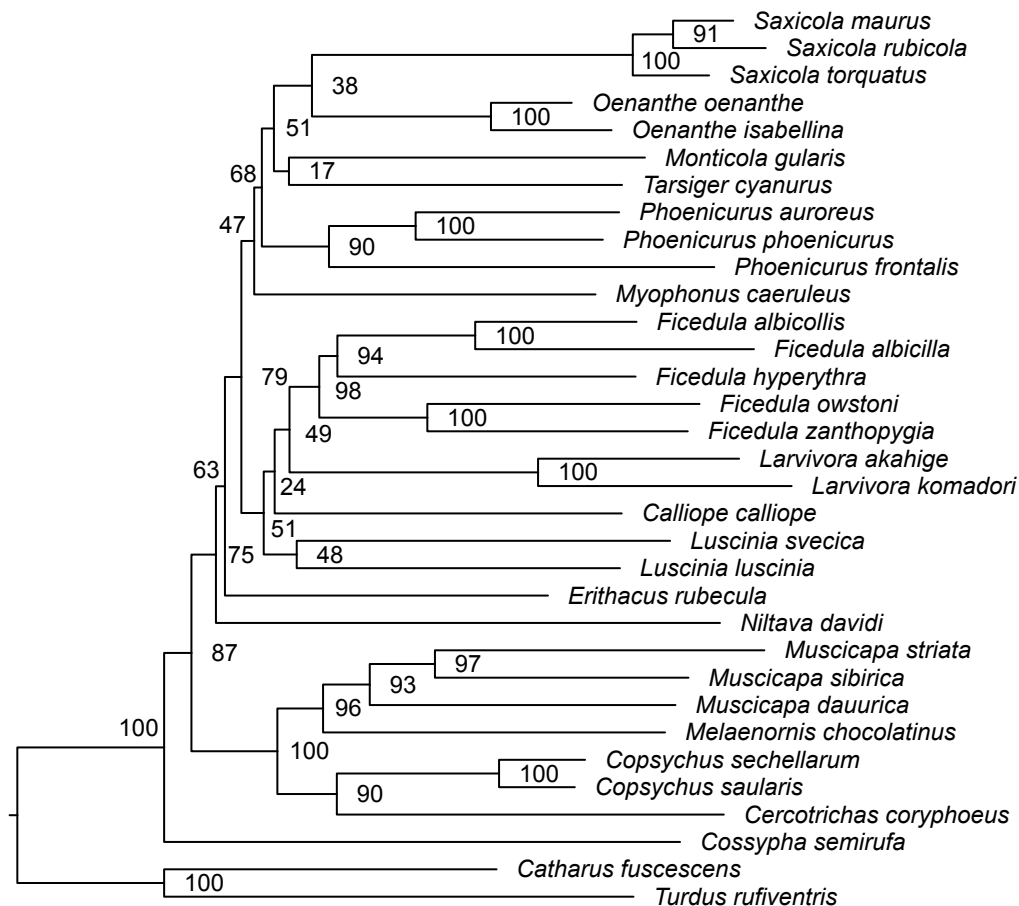


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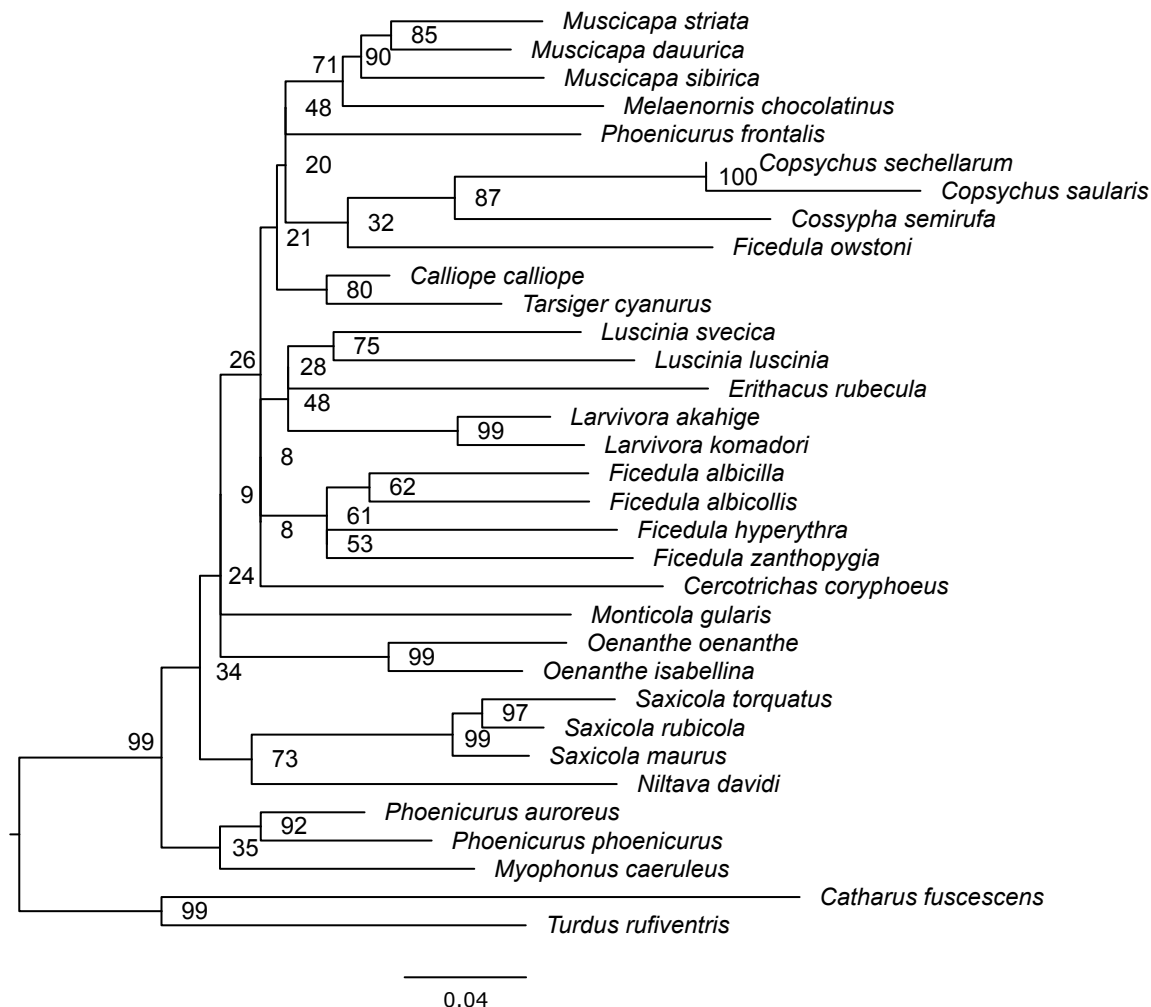
Supplementary Figure S15. Gene tree of ND3 estimated by IQTREE.



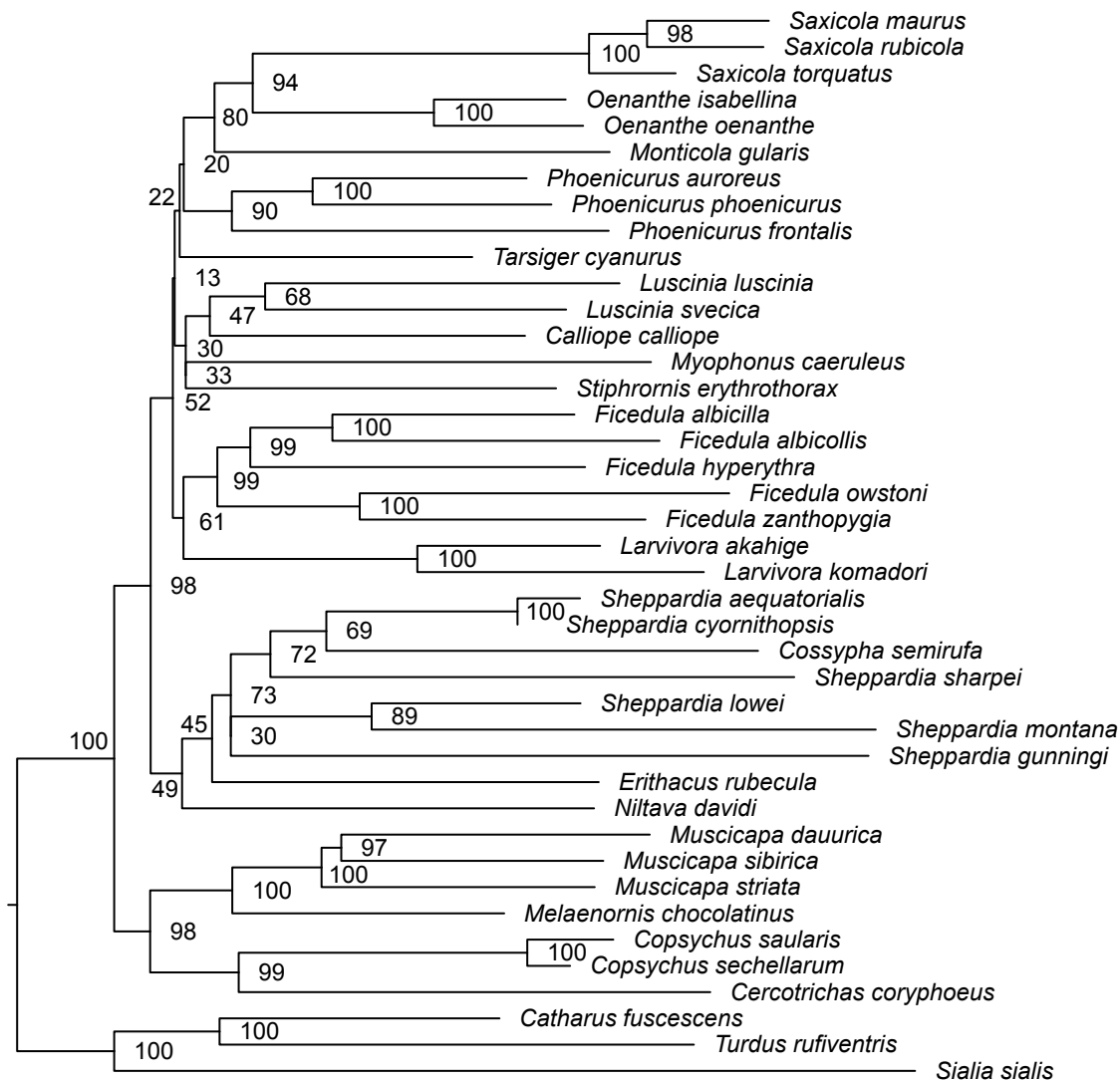
Supplementary Figure S16. Gene tree of ND4 estimated by IQTREE.



Supplementary Figure S17. Gene tree of ND4L estimated by IQTREE.

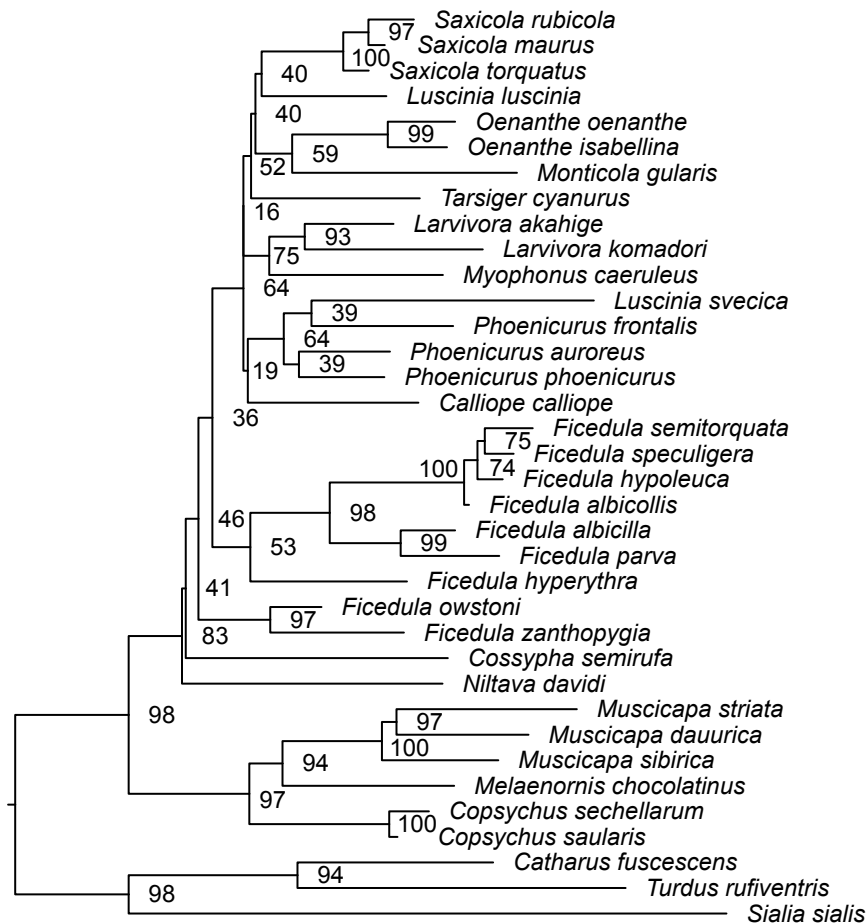


Supplementary Figure S18. Gene tree of ND5 estimated by IQTREE.



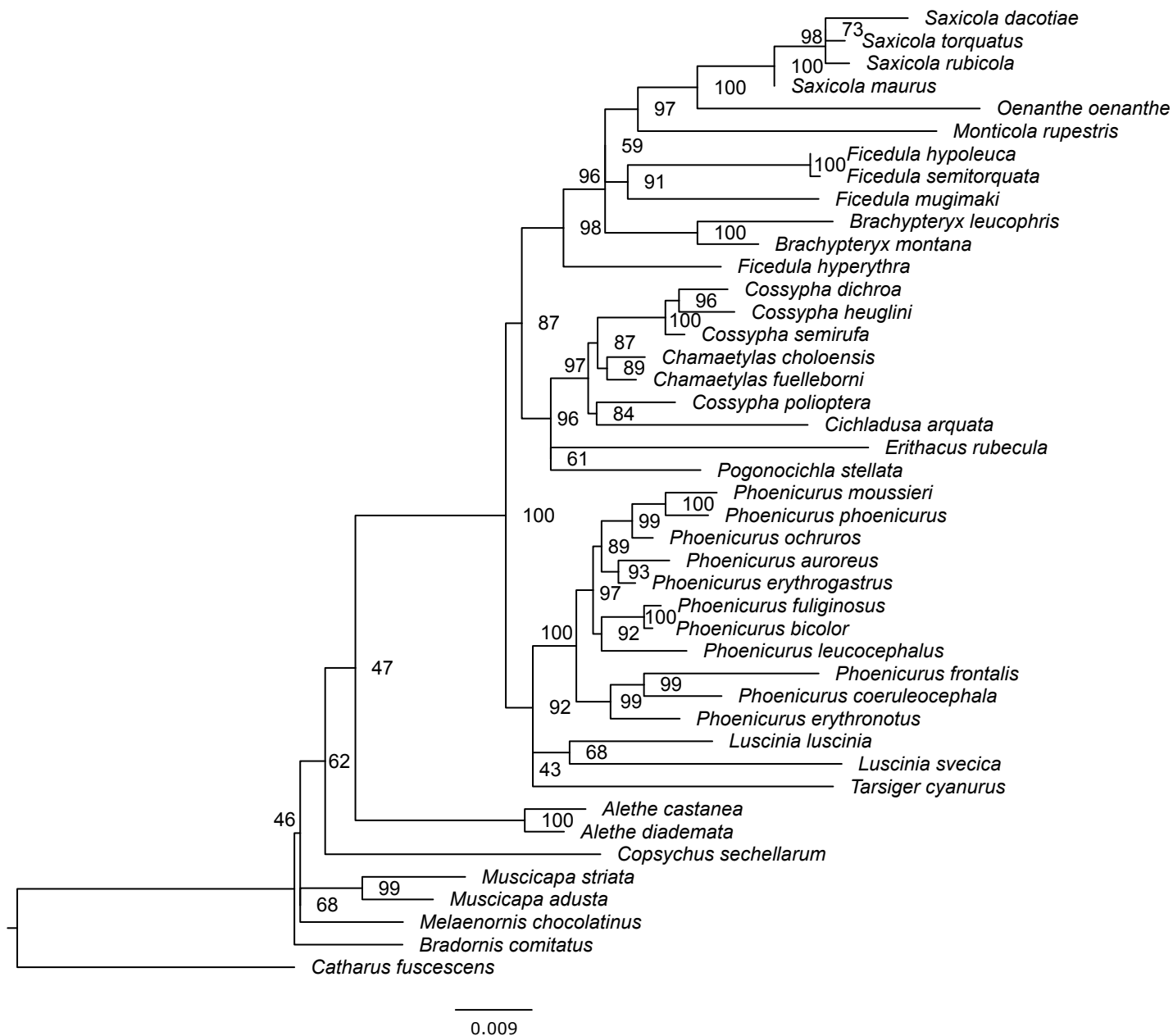
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Supplementary Figure S19. Gene tree of ND6 estimated by IQTREE.



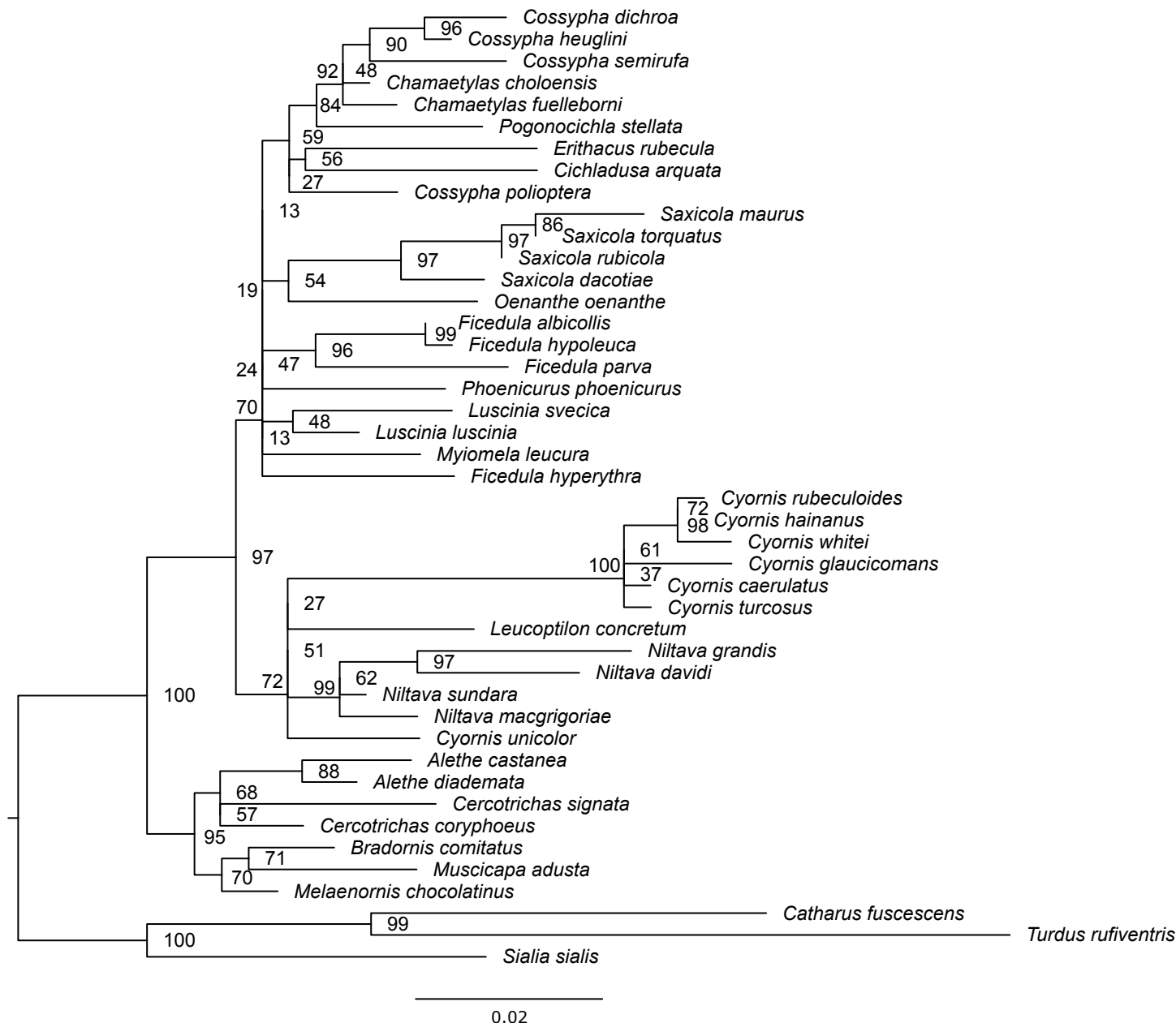
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Supplementary Figure S20. Gene tree of ACO1 estimated by IQTREE.

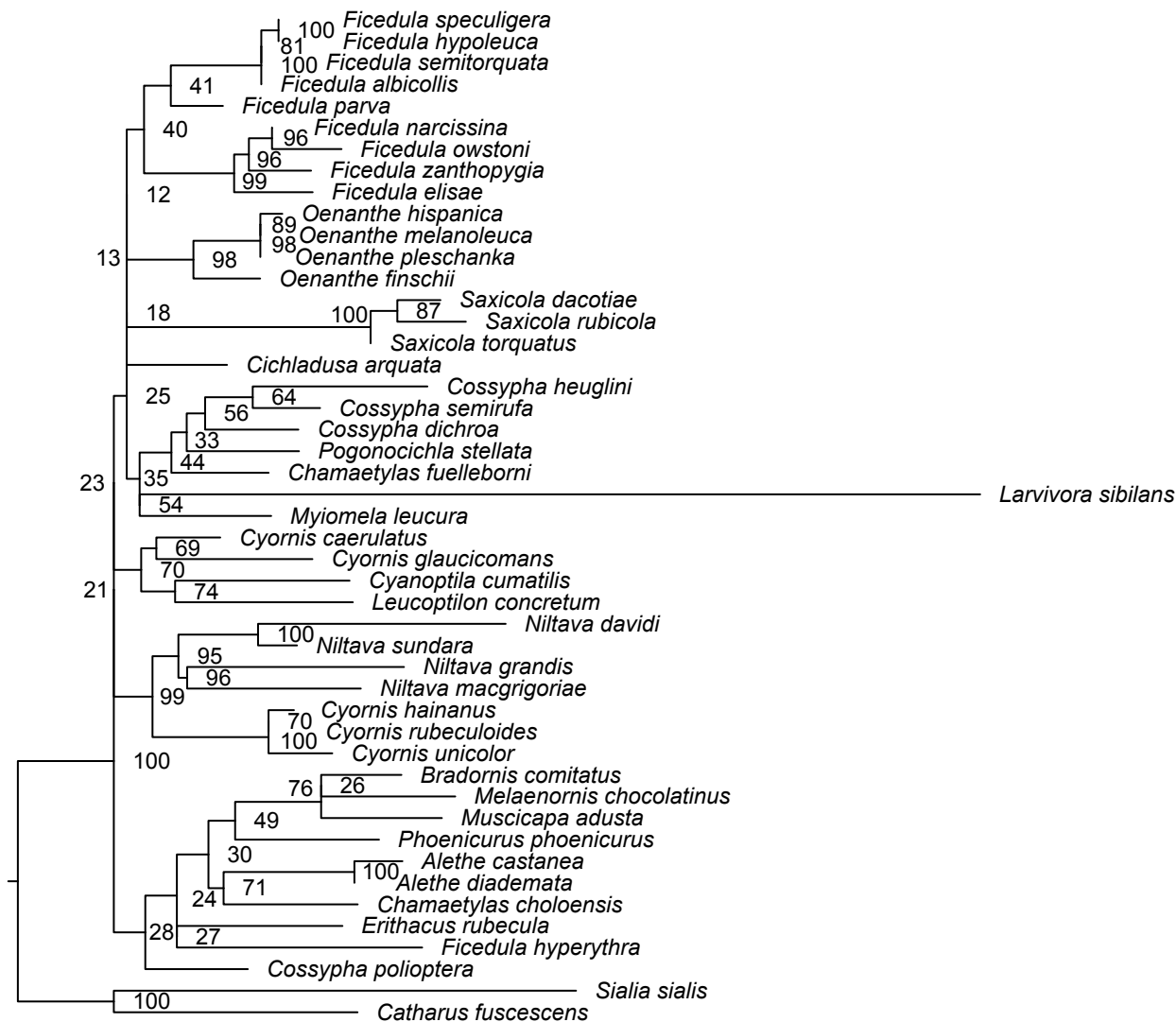




Supplementary Figure S21. Gene tree of BRM estimated by IQTREE.

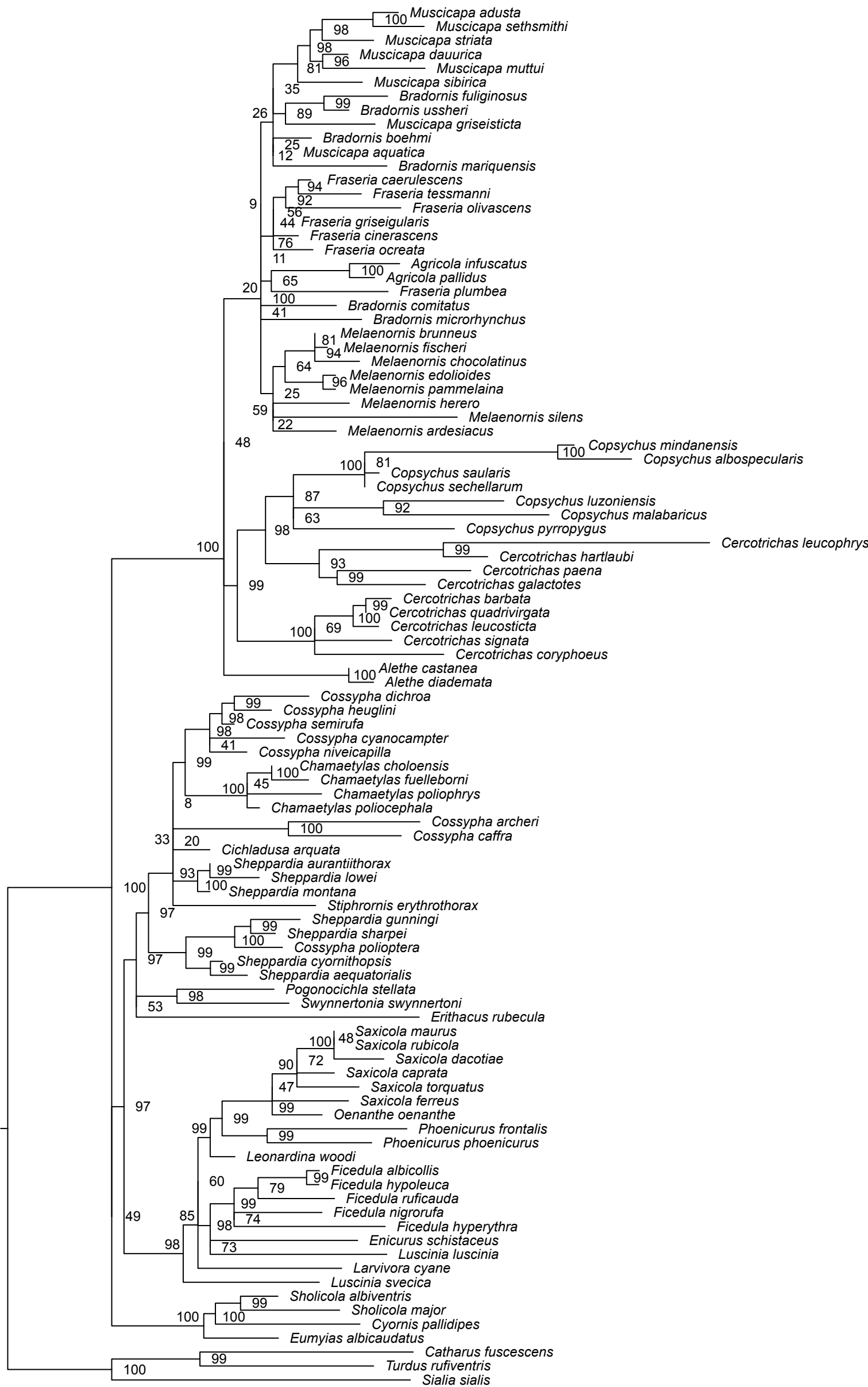


Supplementary Figure S22. Gene tree of CHDZ estimated by IQTREE.

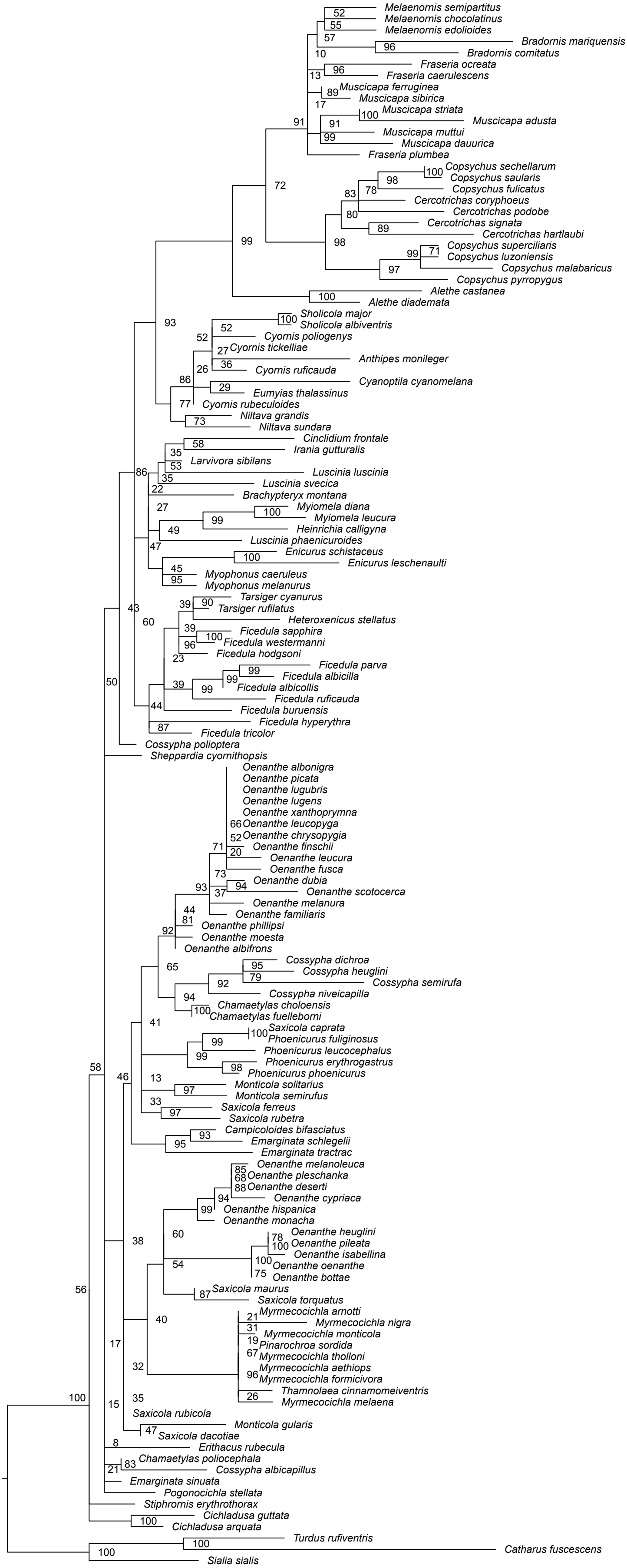


0.02

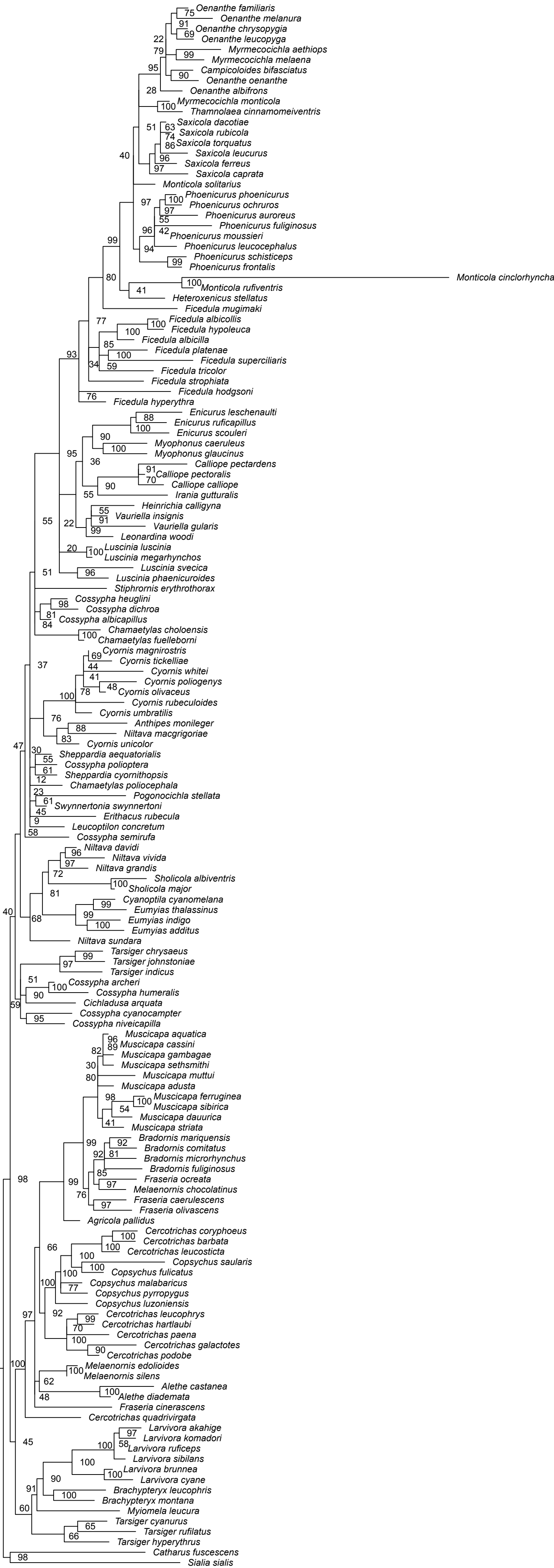
Supplementary Figure S23. Gene tree of FGB estimated by IQTREE.



Supplementary Figure S24. Gene tree of GAPDH estimated by IQTREE.

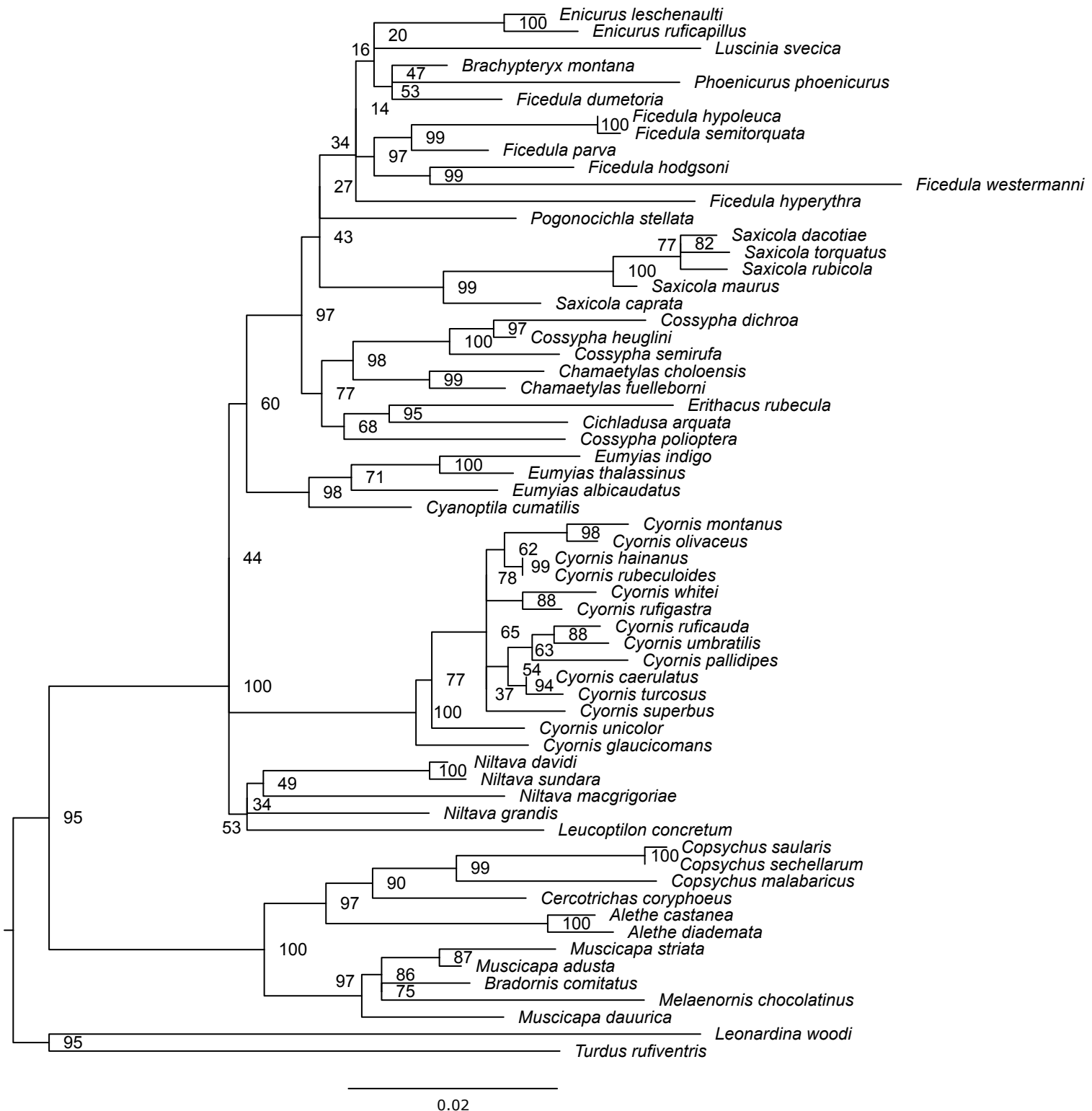


Supplementary Figure S25. Gene tree of LDH estimated by IQTREE.

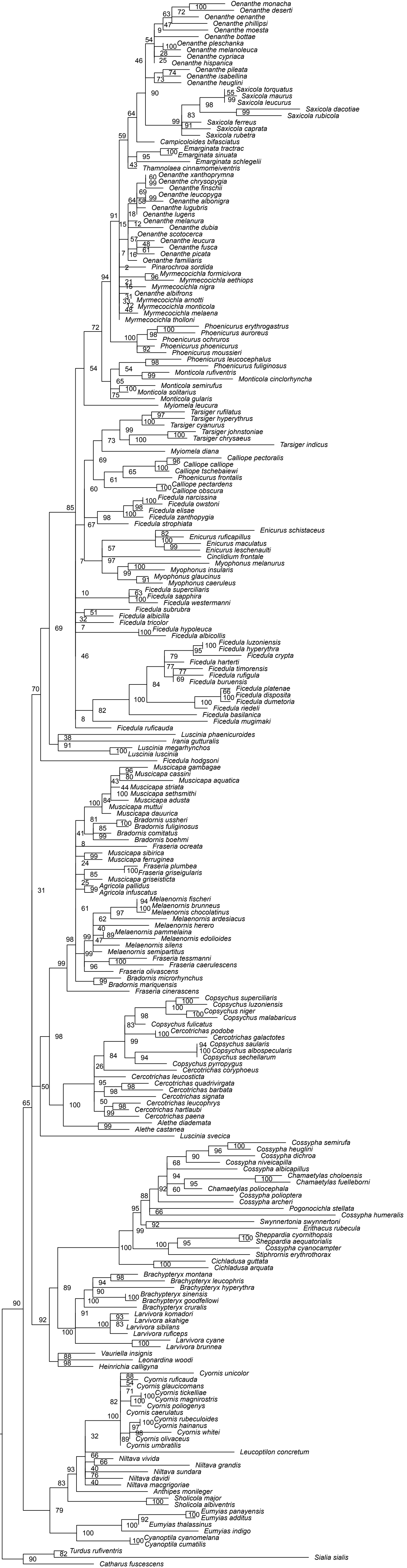


0.03

Supplementary Figure S26. Gene tree of MUSK estimated by IQTREE.

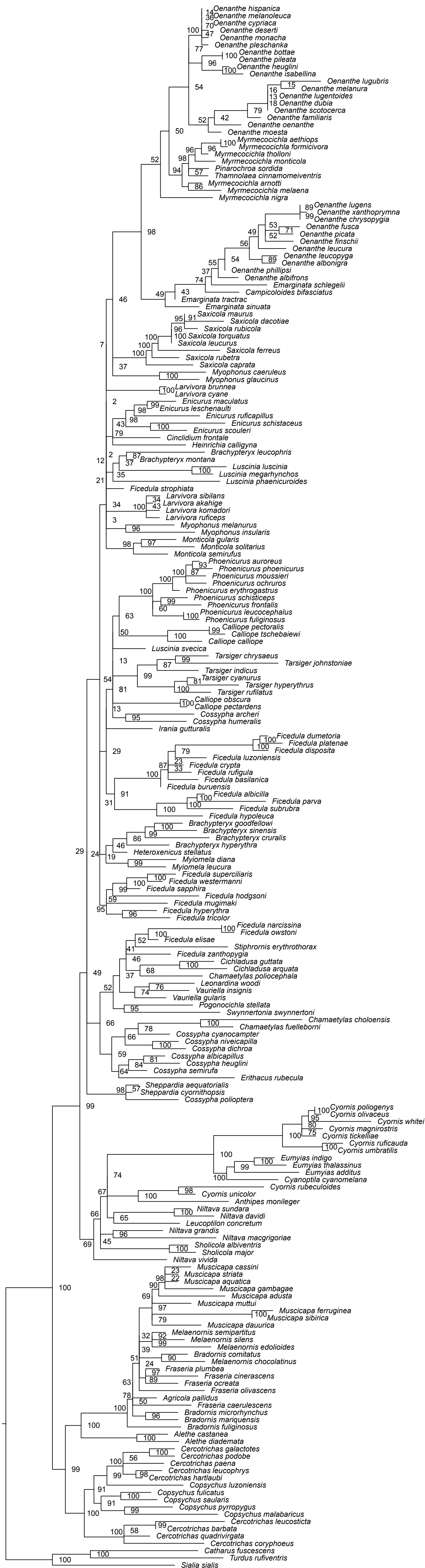


Supplementary Figure S27. Gene tree of MYO estimated by IQTREE.



0.007

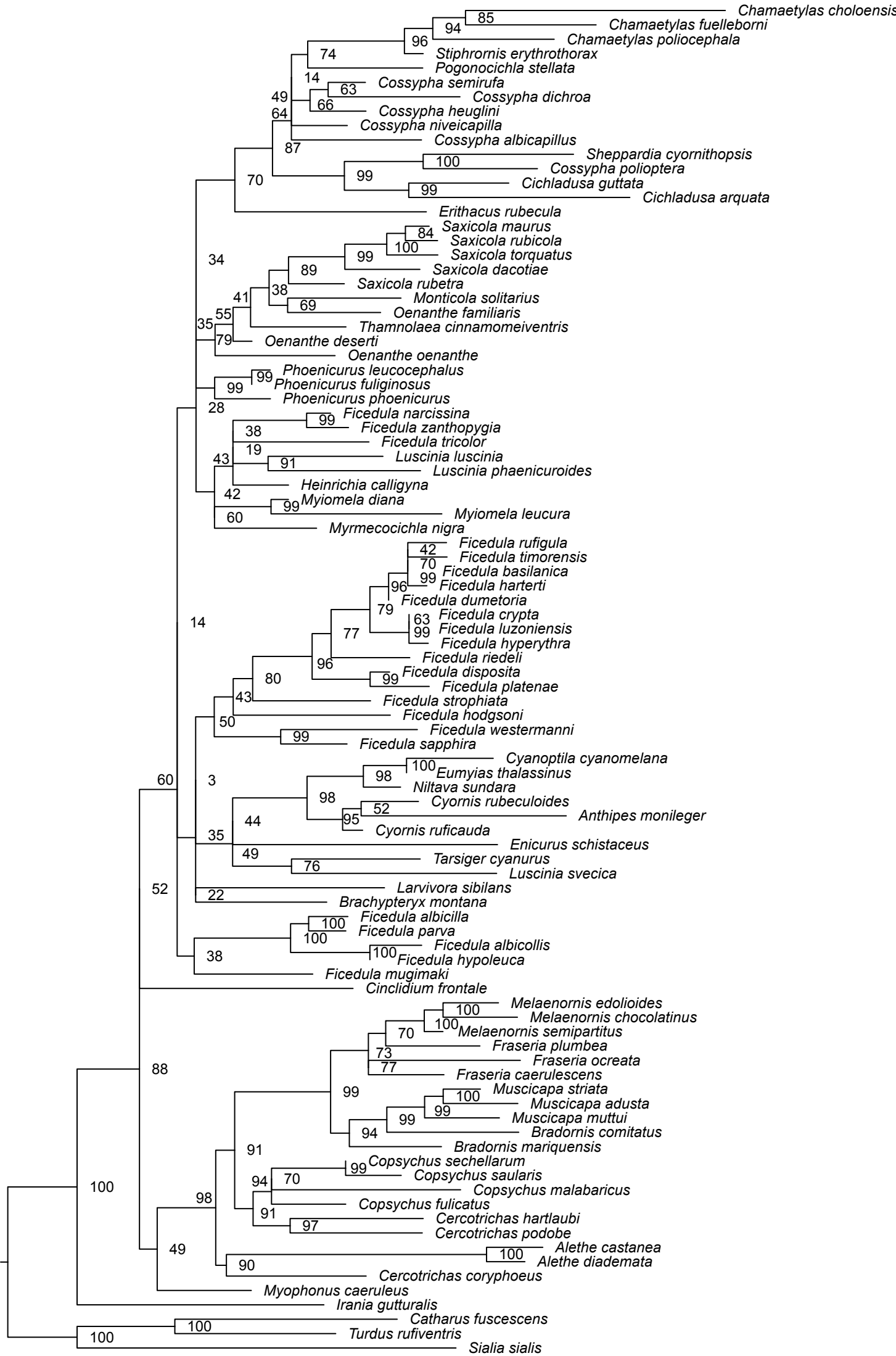
Supplementary Figure S28. Gene tree of ODC estimated by IQTREE.



0.01

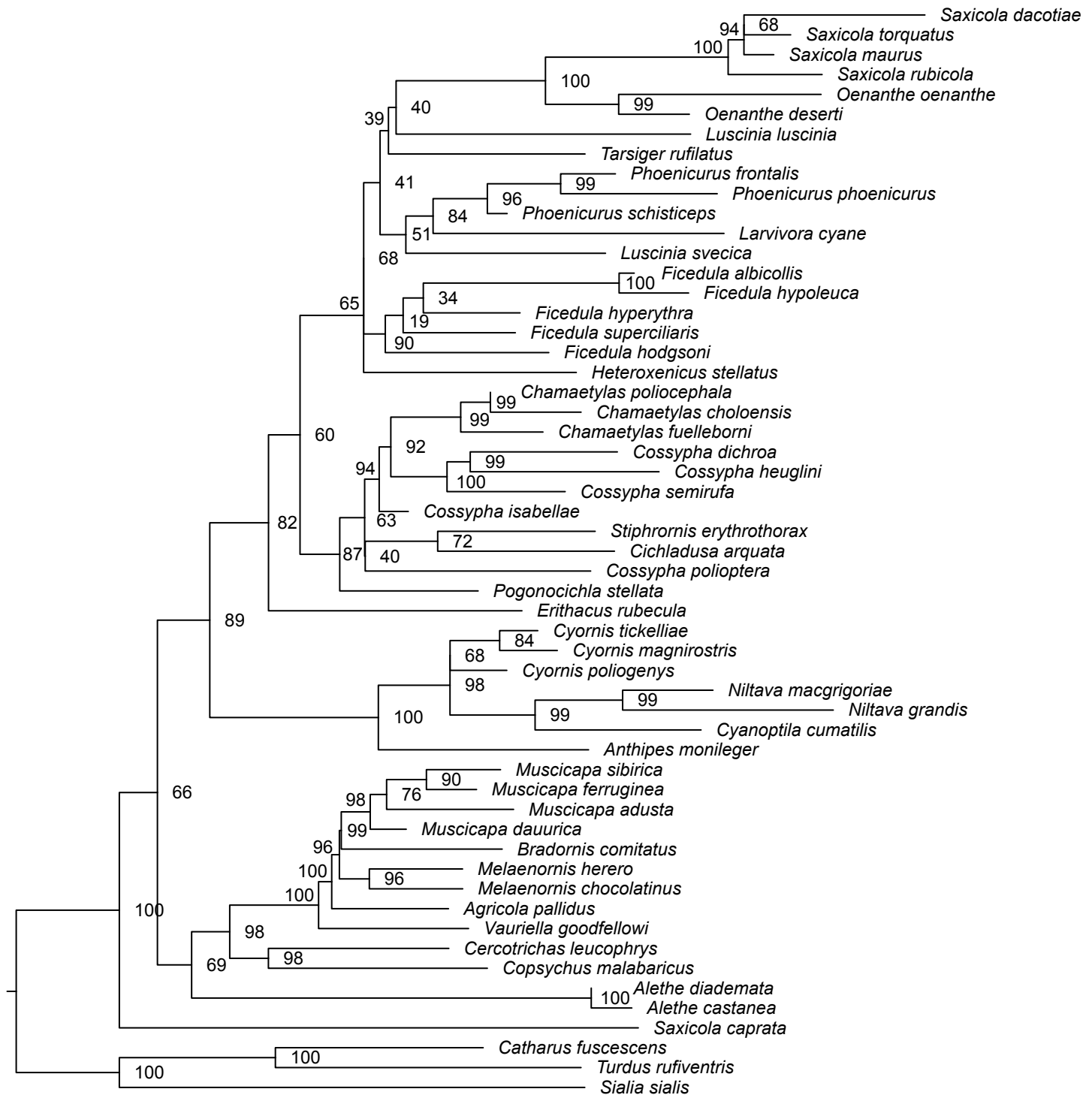


Supplementary Figure S29. Gene tree of PEPCK estimated by IQTREE.



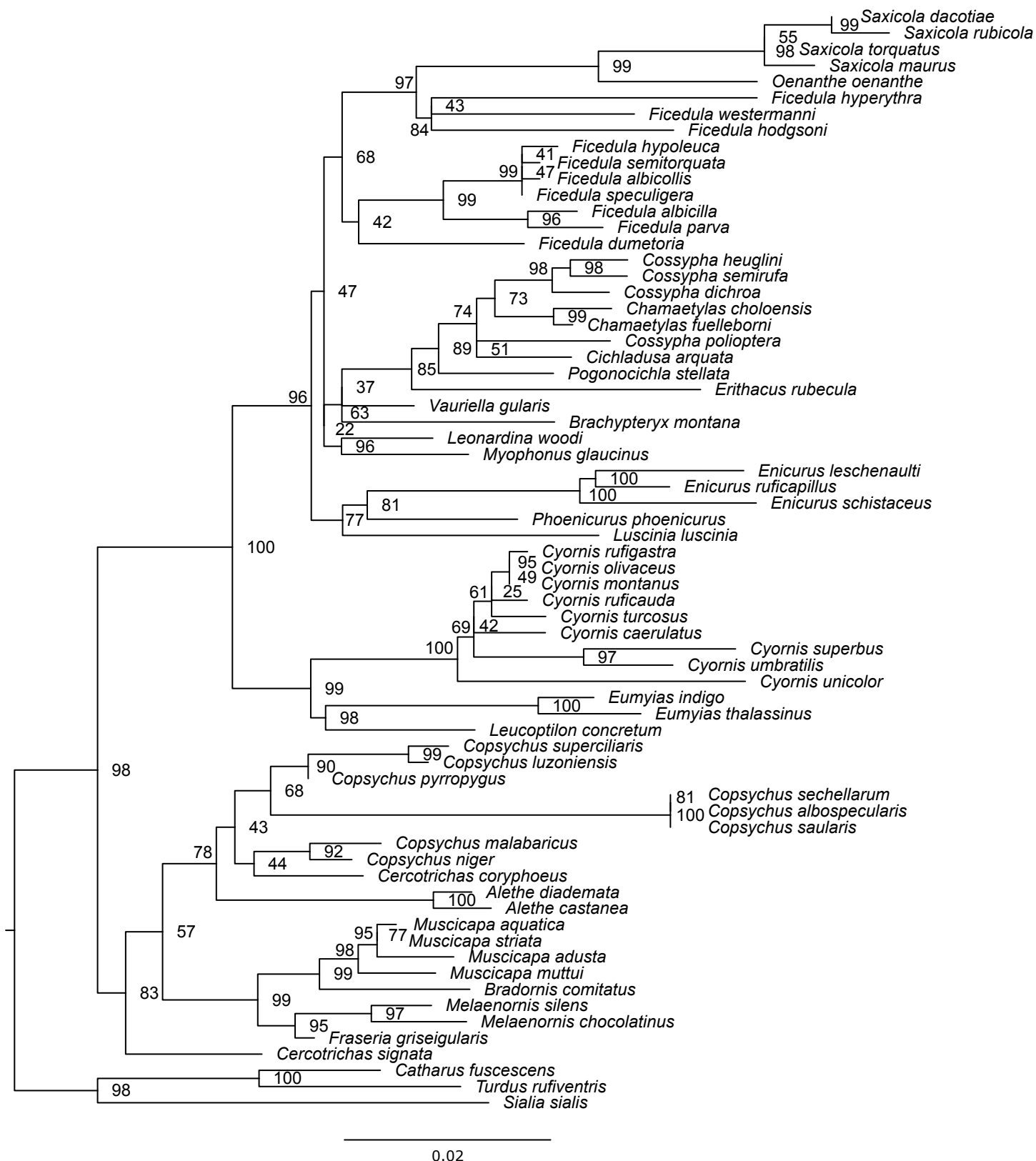
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Supplementary Figure S30. Gene tree of RAG1 estimated by IQTREE.

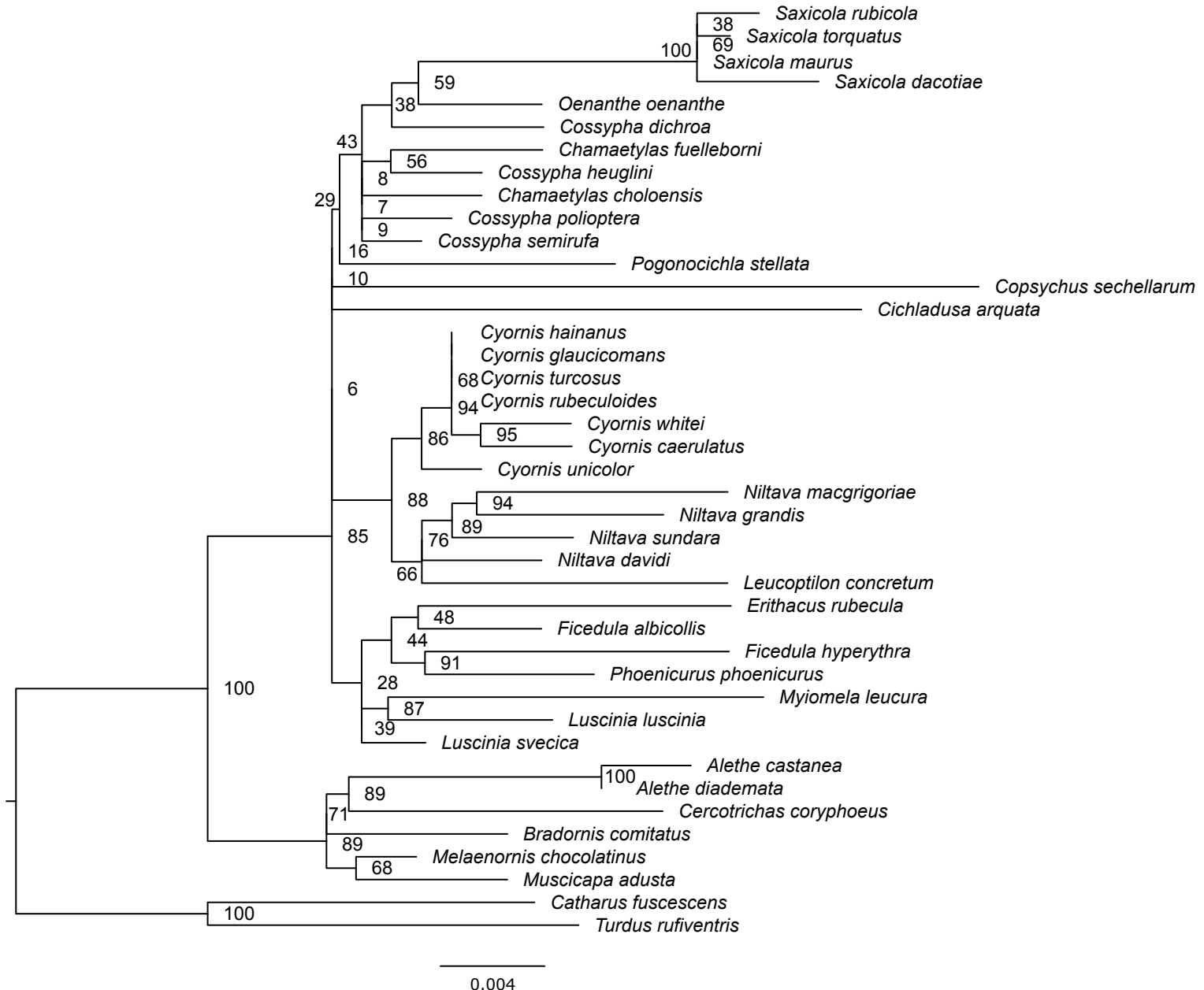


0.006

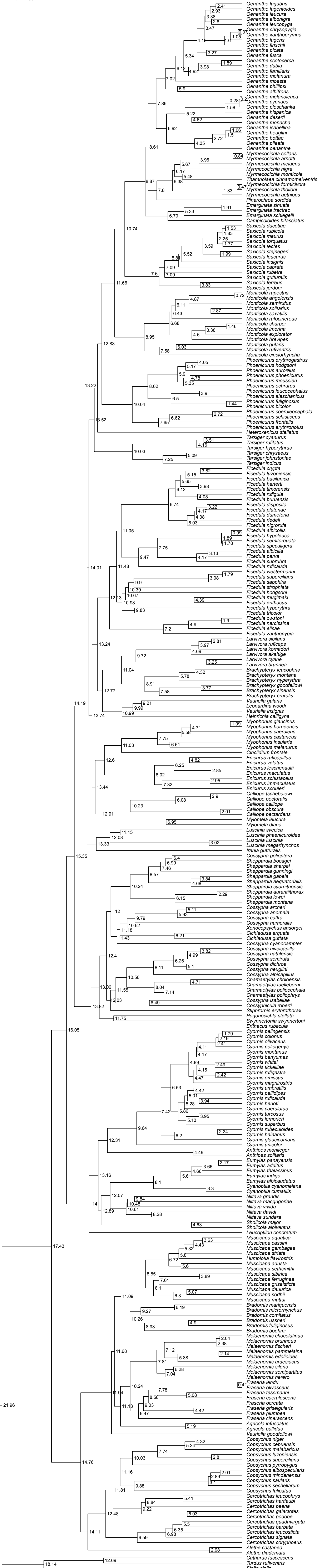
Supplementary Figure S31. Gene tree of TGFB2 estimated by IQTREE.



Supplementary Figure S32. Gene tree of Z185 estimated by IQTREE.

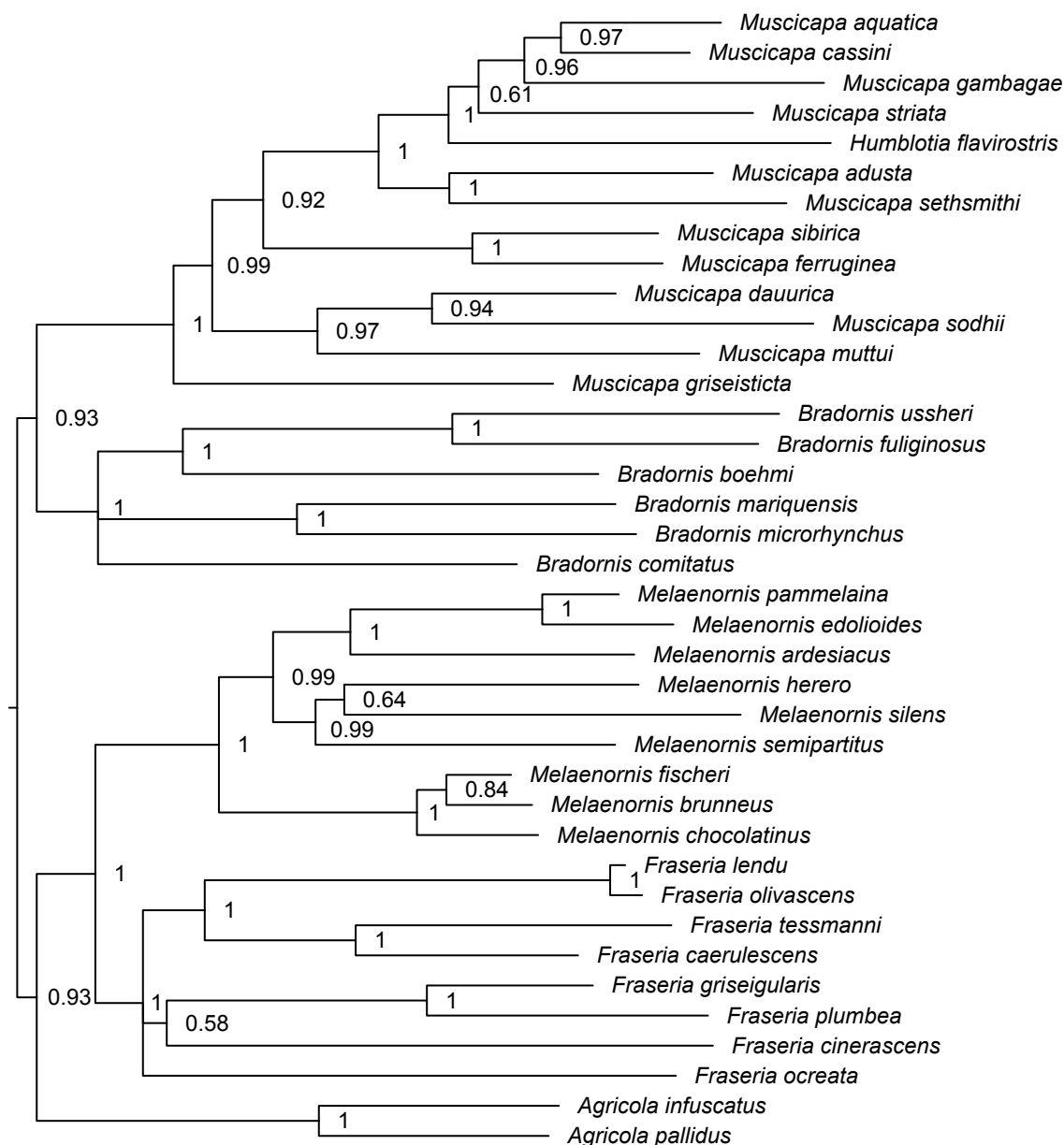


Supplementary Figure S33. Divergence time in million years ago (Mya) estimated by TreePL using the topology of the ML tree based on all loci.



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Supplementary Figure S34. Concatenated Bayesian tree based on all loci for clade A1 (Muscicapini). Parameter settings for running this analysis were the same to those described in Methods.



0.02