

Title: Origin and macroevolution of micro-moths on sunken Hawaiian islands

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Running Head: Phylogenomics of Hawaiian moths

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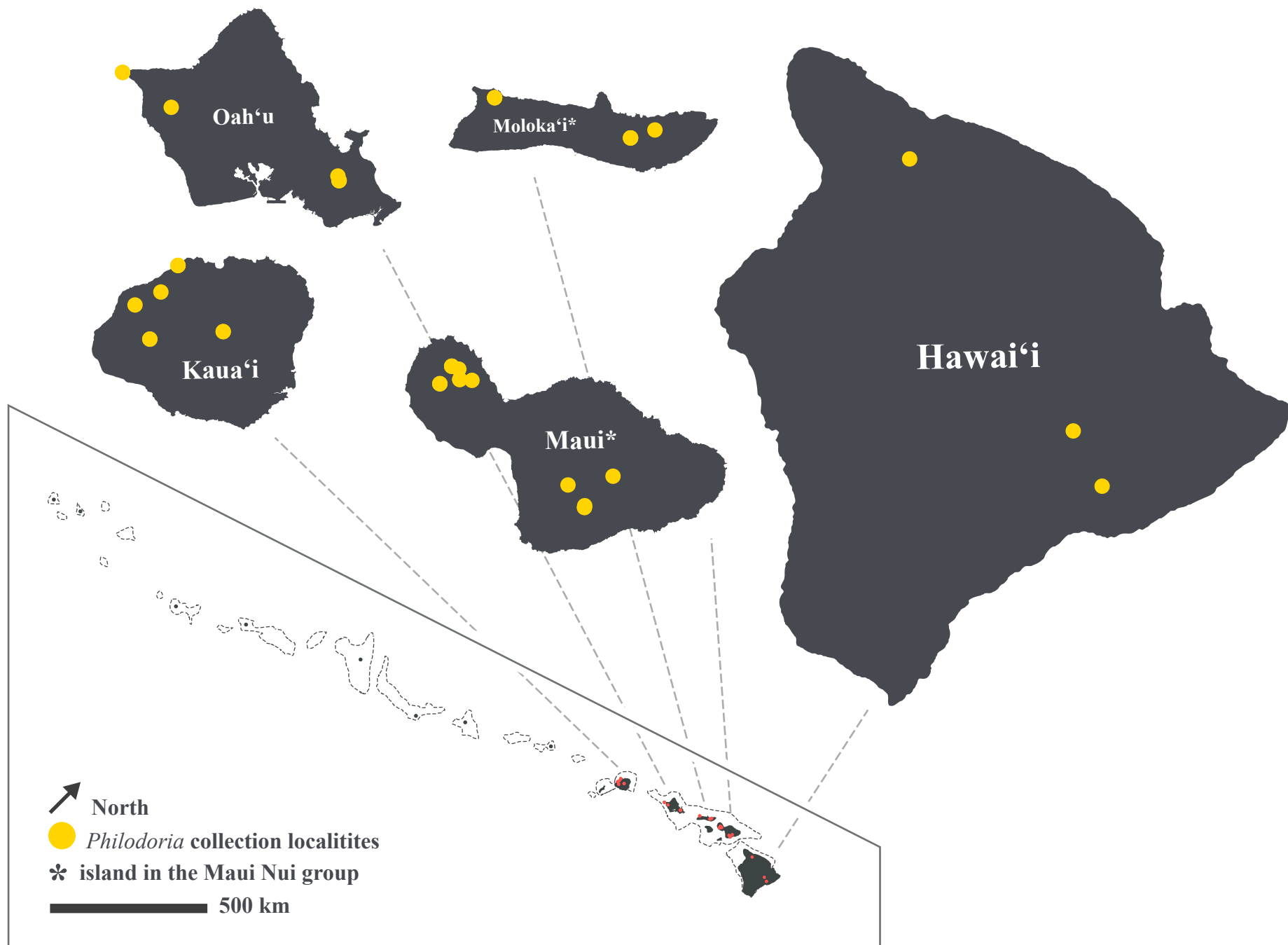
Electronic Supplementary Material contents:

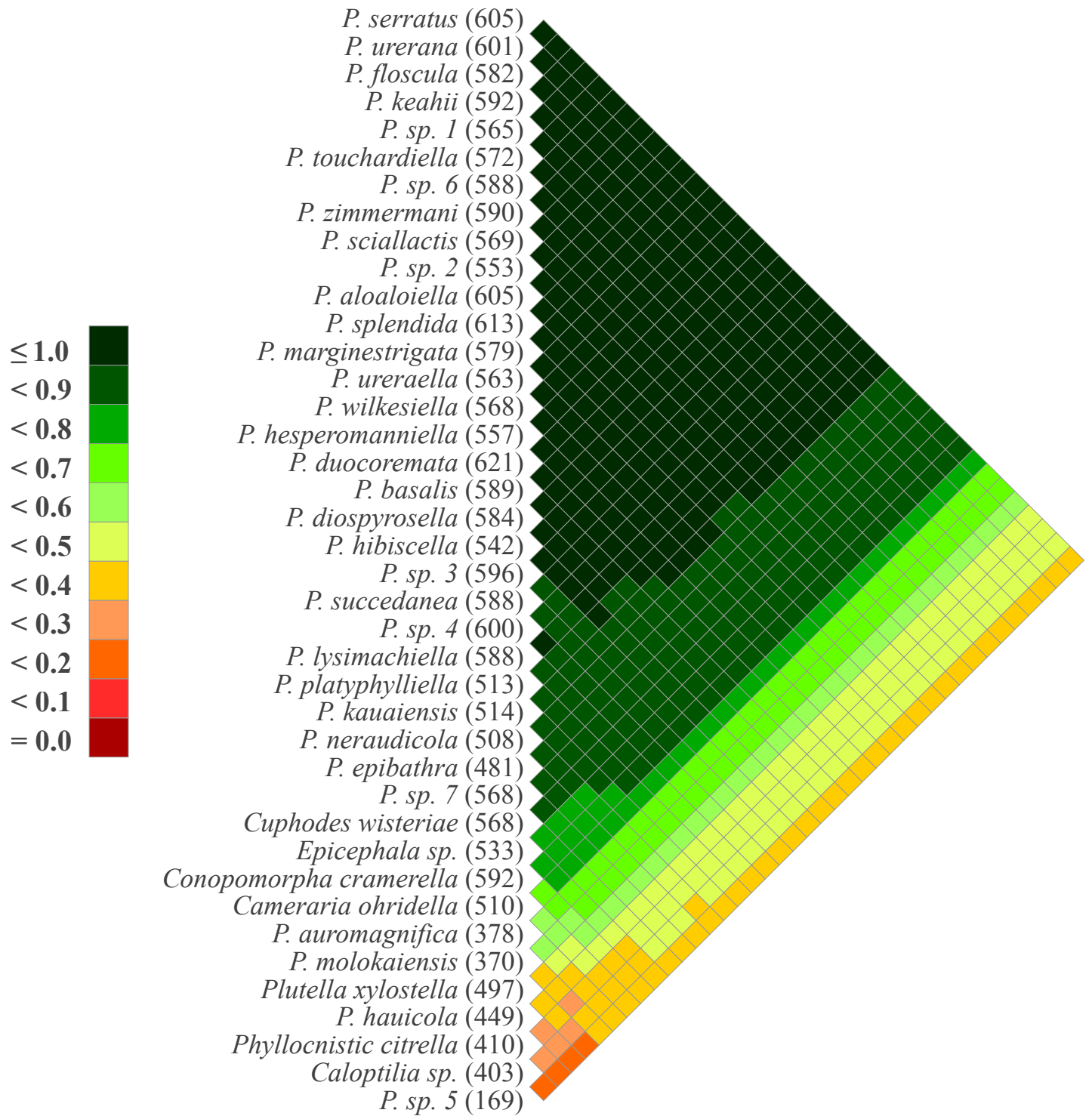
- p. 4 – Map of *Philodoria* collection localities as part of this study.
- p. 5 – ALISTAT heatmap of pairwise nucleotide completeness for the final nucleotide alignment of Dataset 1. Completeness refers to the percentage of alignment columns in which data is present between two taxa. Numbers in parentheses that follow taxon names indicate number of captured loci.
- p. 6 – Maximum likelihood phylogeny from 507 loci (nucleotide, probe region only) with non-parametric bootstrap support at nodes.
- p. 7 – Maximum likelihood phylogeny from 507 loci (nucleotide, probe region only) with ultrafast bootstrap and SH-aLRT support at nodes.
- p. 8 – Maximum likelihood phylogeny from 507 loci (nucleotide, probe and flanking regions) with non-parametric bootstrap support at nodes.
- p. 9 – Maximum likelihood phylogeny from 507 loci (nucleotide, probe and flanking regions) with ultrafast bootstrap and SH-aLRT support at nodes.
- p. 10 – Maximum likelihood phylogeny from 507 loci (amino acid, probe region only) with non-parametric bootstrap support at nodes.
- p. 11 – Maximum likelihood phylogeny from 507 loci (amino acid, probe region only) with ultrafast bootstrap and SH-aLRT support at nodes.
- p. 12 – Species tree from ASTRAL-II analysis of 507 gene trees (probe region only) with quartet score at each node.
- p. 13 – Species tree from ASTRAL-II analysis of 507 gene trees (probe and flanking regions) with quartet score at each node.
- p. 14 – Maximum likelihood phylogeny from 50 loci selected in Robinson-Foulds test for use in divergence time estimation.

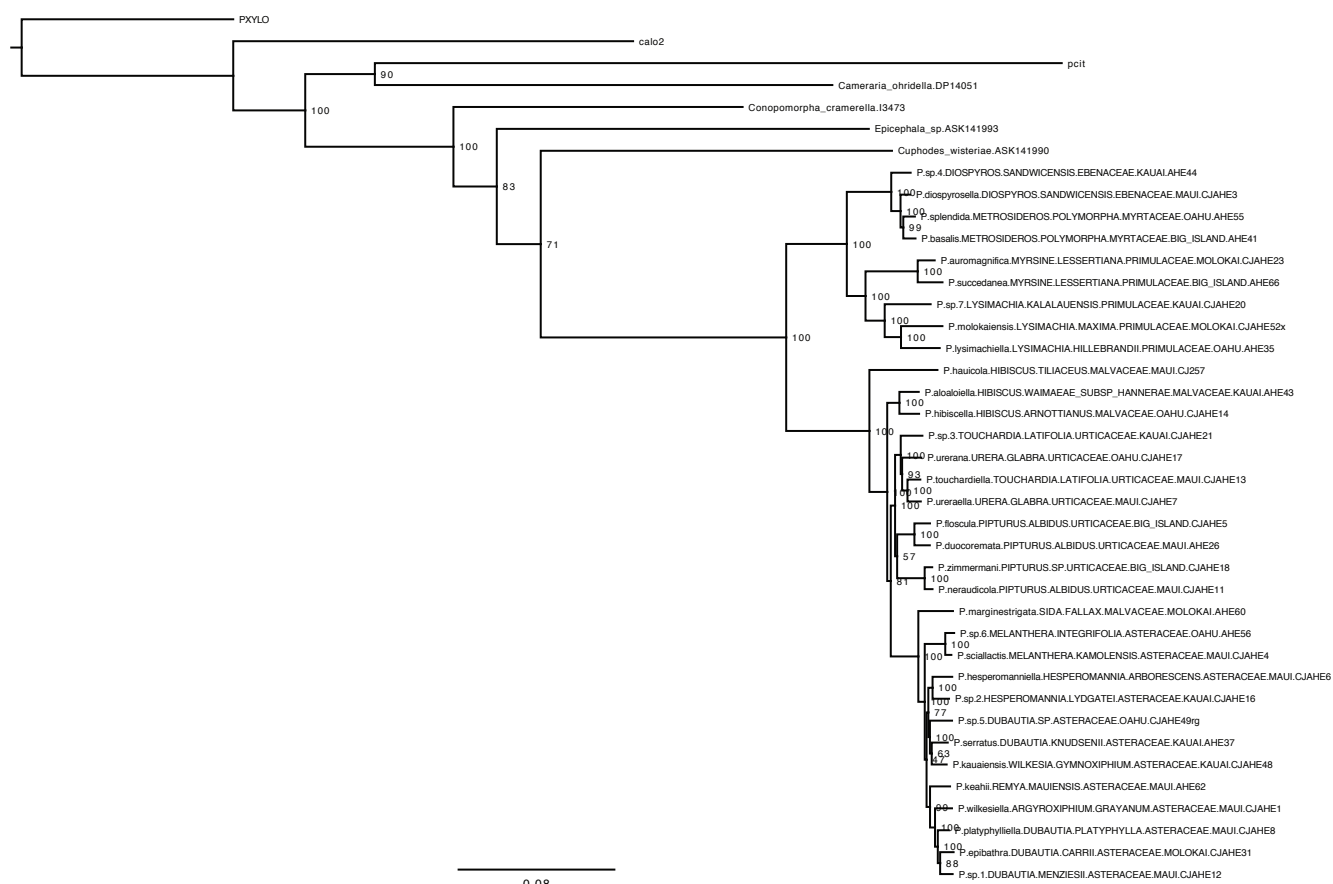
- p. 15 – Most parsimonious ancestral state reconstruction of *Philodoria* host plant family relationships.
- p. 16 – Trees scores from phylogenetic analyses.
- p. 17-18 – *Philodoria* species sequenced in this study, their host plants, and localities from which they were sampled.

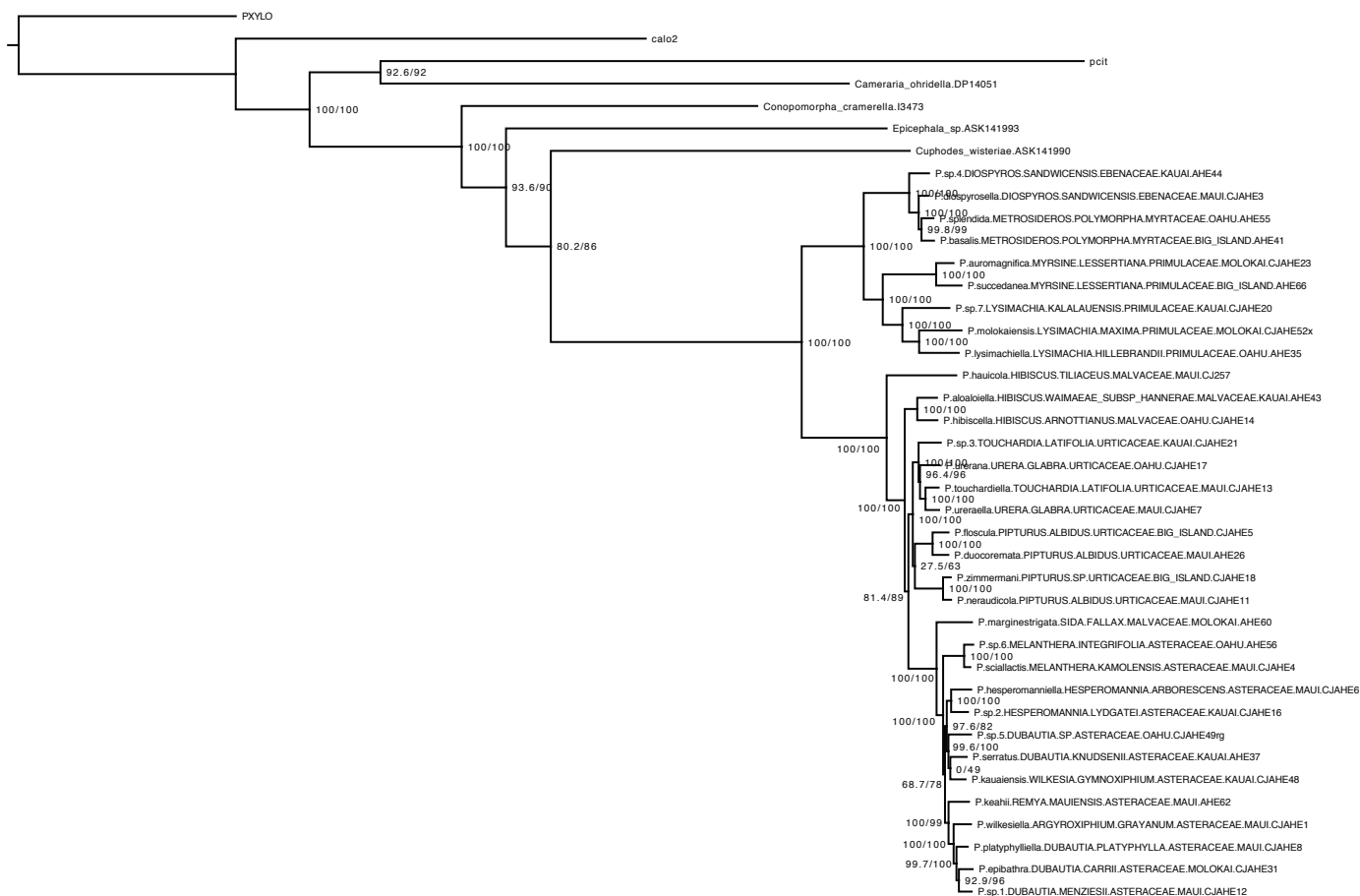
Other data not included here, but deposited in the Dryad Digital Repository (datadryad.org, doi:10.5061/dryad.qq6hv63):

1. Dataset1_FcC_supermatrix_507_nuc: Final nucleotide alignment for 507 loci (Dataset 1, probe region only) used in phylogenetic analyses.
2. Dataset1_FcC_supermatrix_507_AA: Final amino acid alignment for 507 loci (Dataset 1, probe region only) used in phylogenetic analyses.
3. Dataset2_FcC_supermatrix_D60E15_FULL_LENGTH_FINAL: Final nucleotide alignment for 507 loci (Dataset 2, probe and flanking regions) used in phylogenetic analyses.
4. A3_MCC_BEAST: Maximum Clade Credibility tree from most likely divergence time estimate (Table 2 - Analysis A3).
5. A3_MCC_BEAST_infile: BEAST infile for most likely divergence time estimate (Table 2 - Analysis A3).
6. Gene_Coverage: Gene coverage information for nucleotide dataset for 507 loci (probe region only).

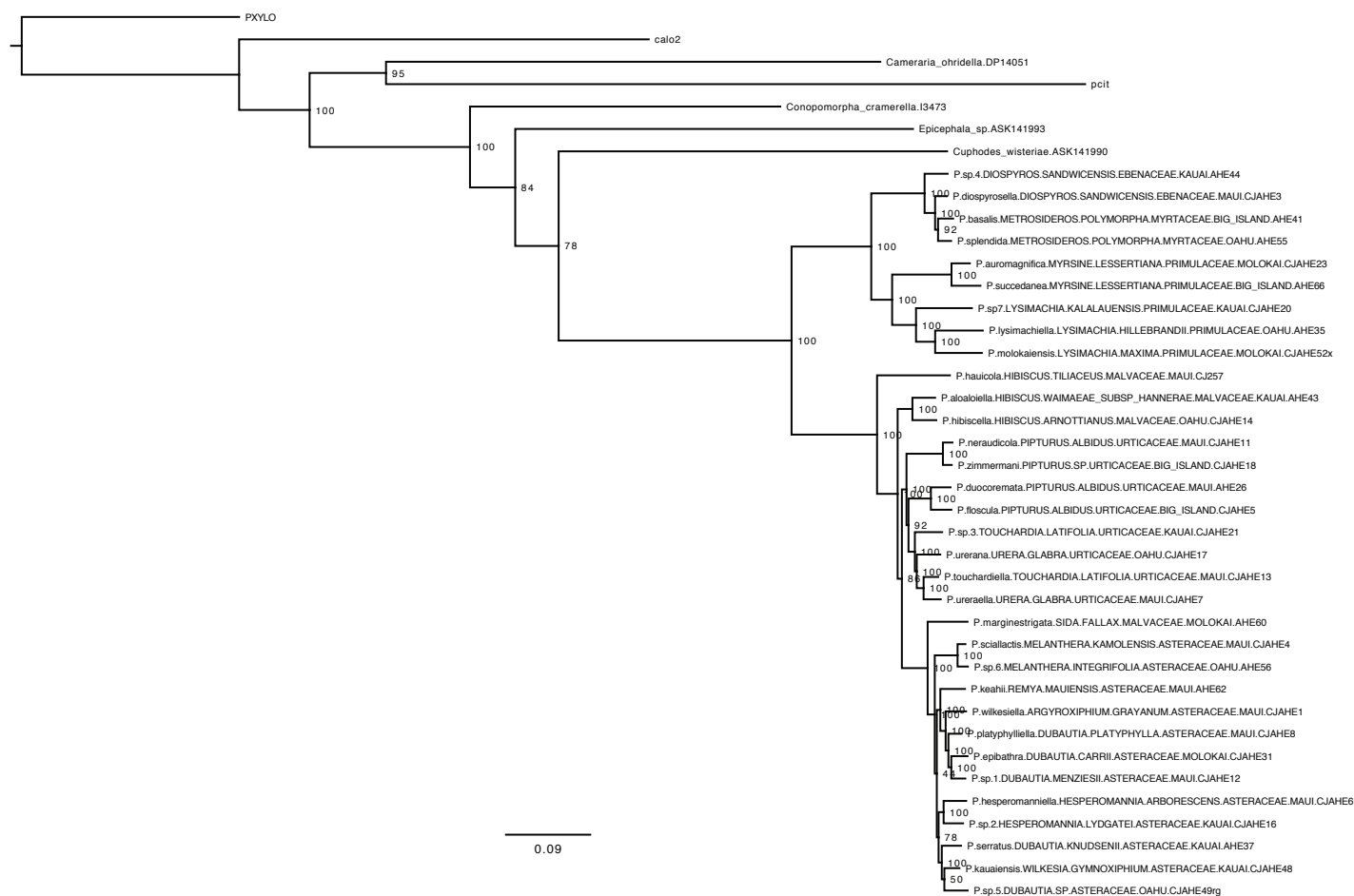


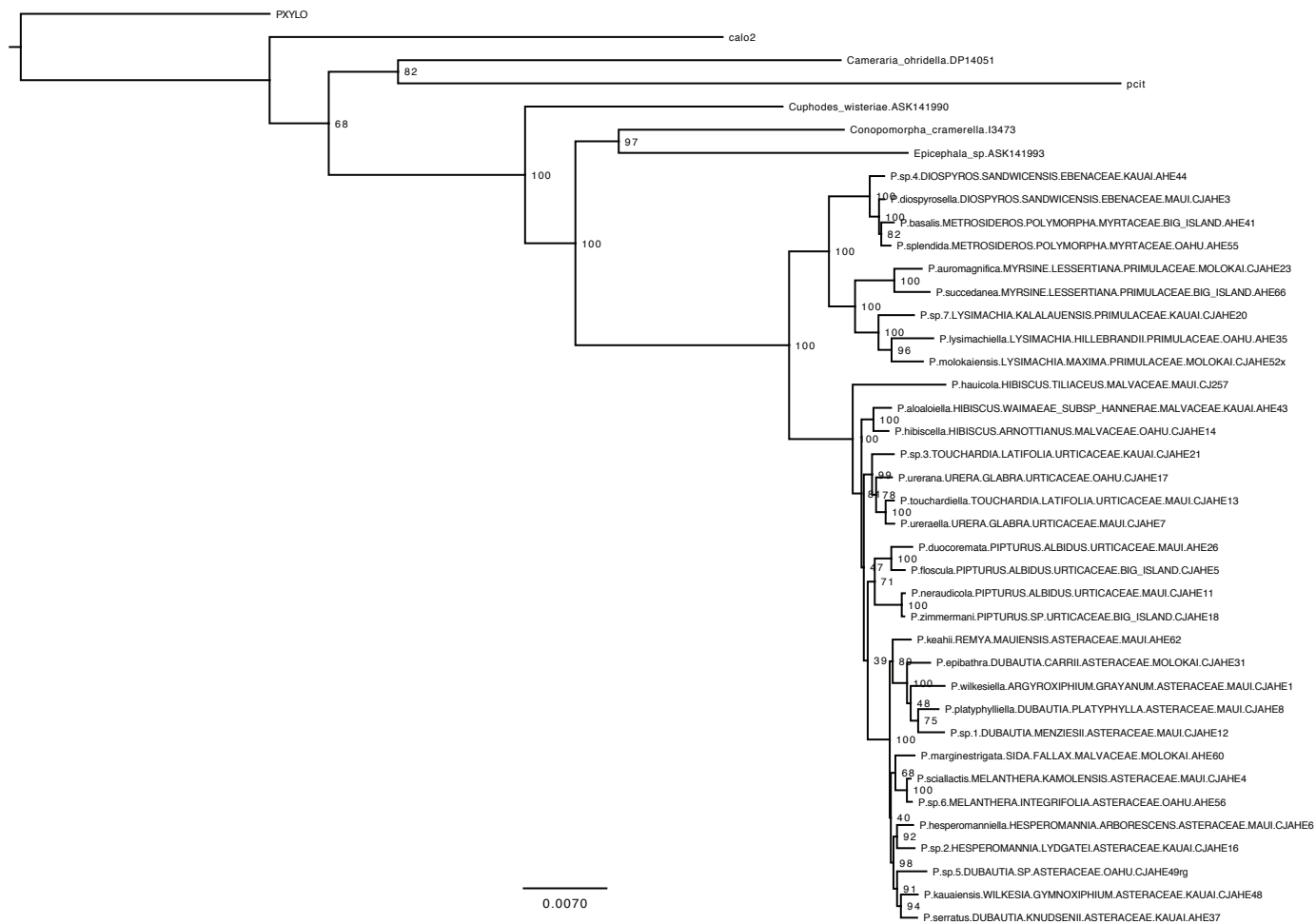


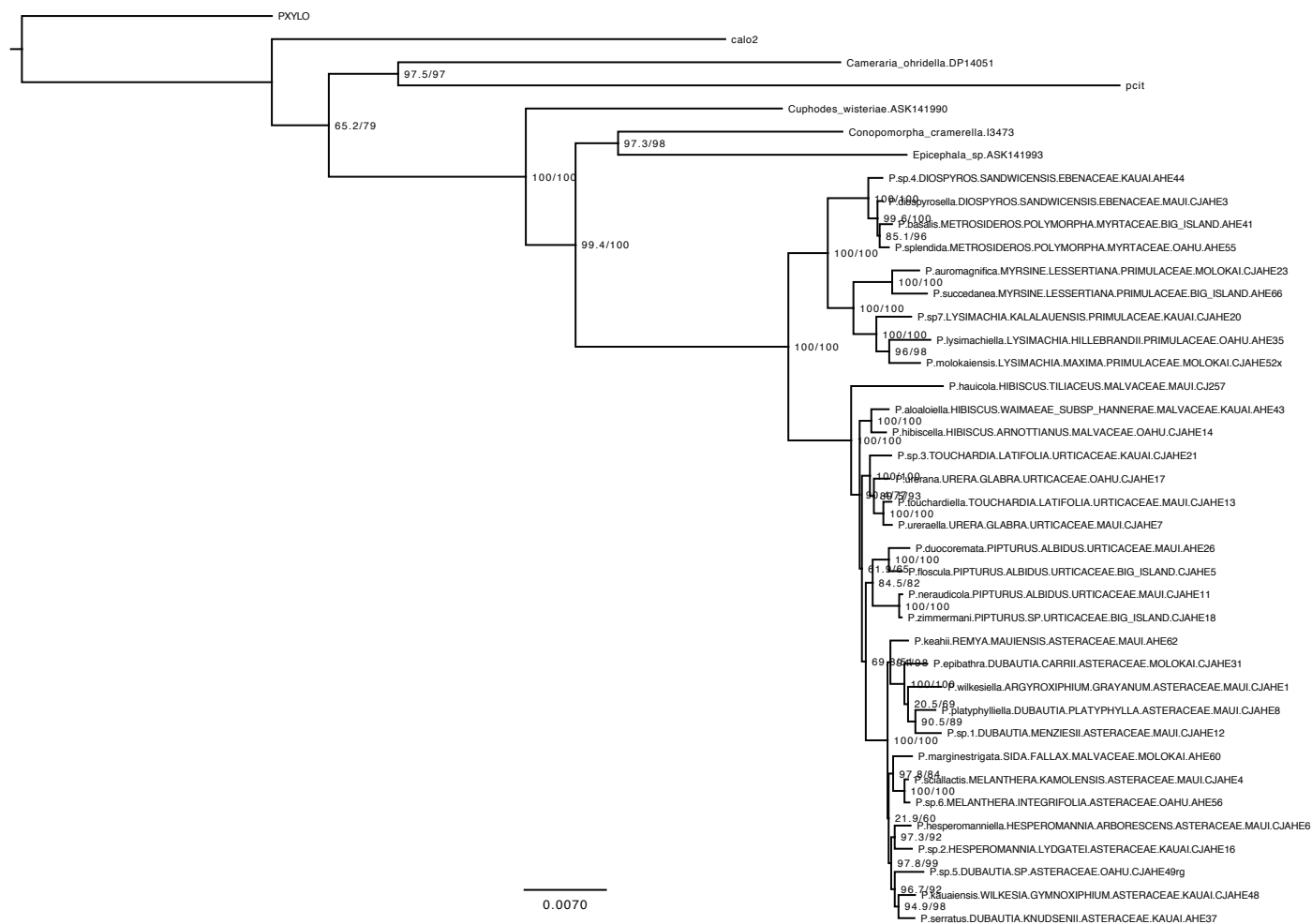


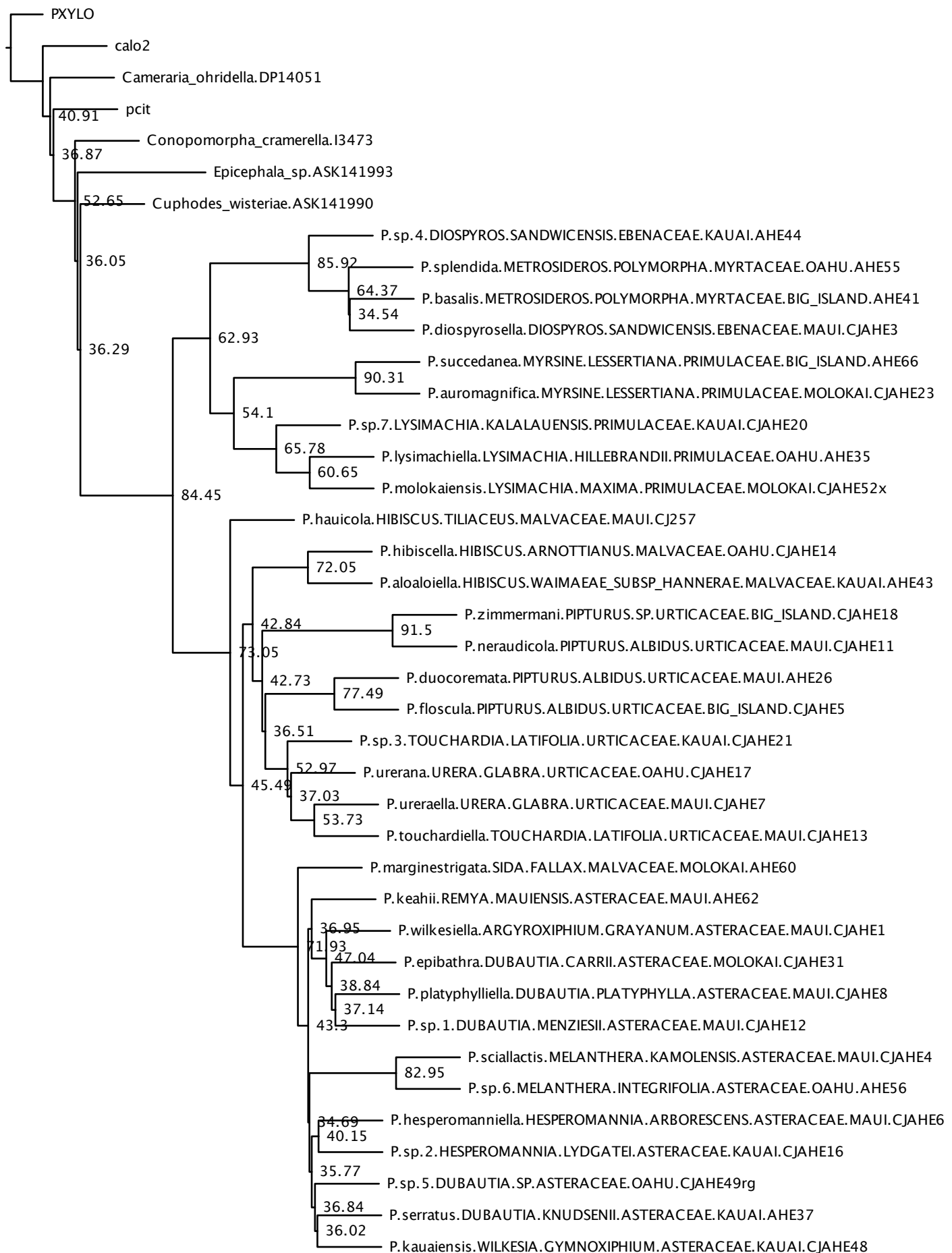


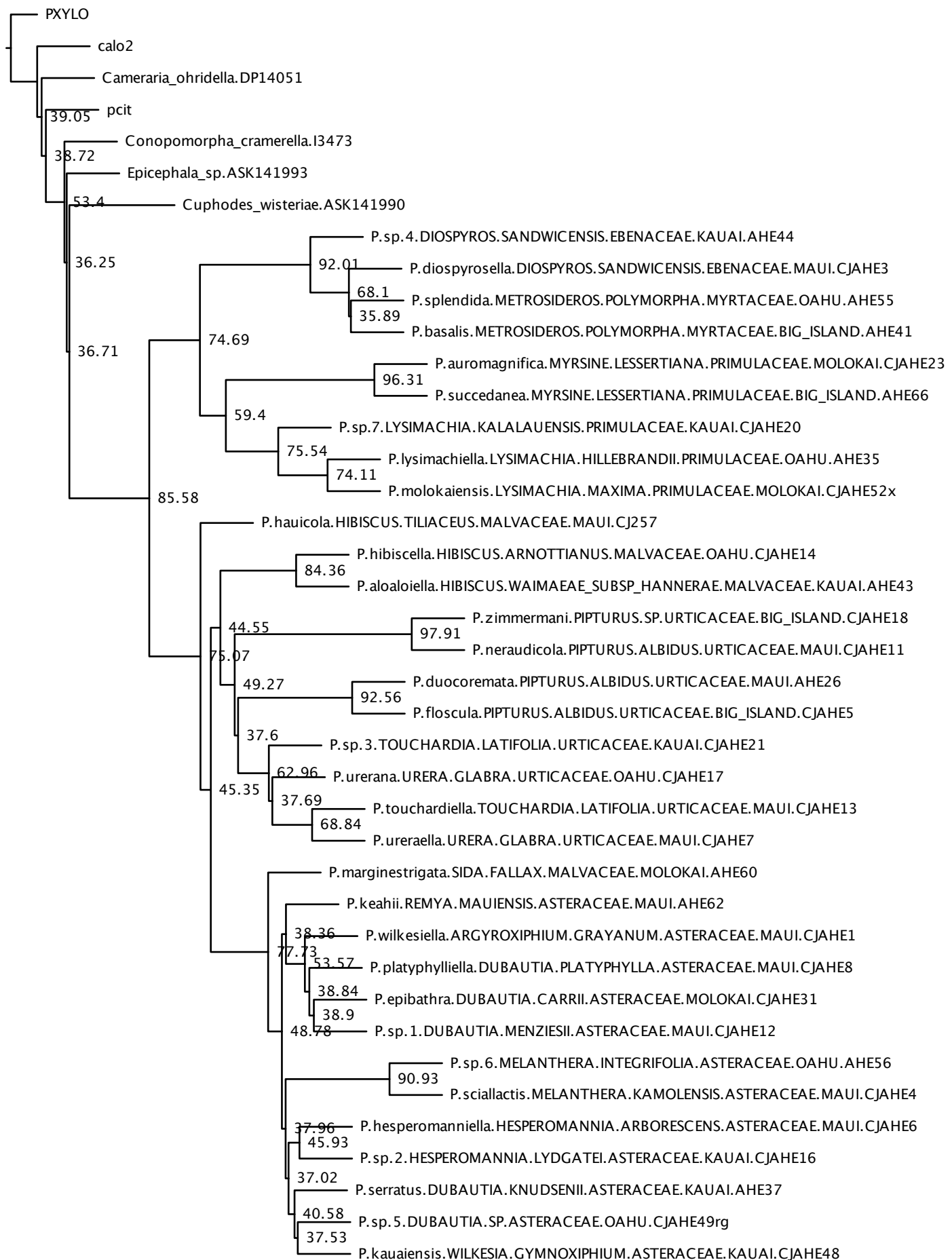
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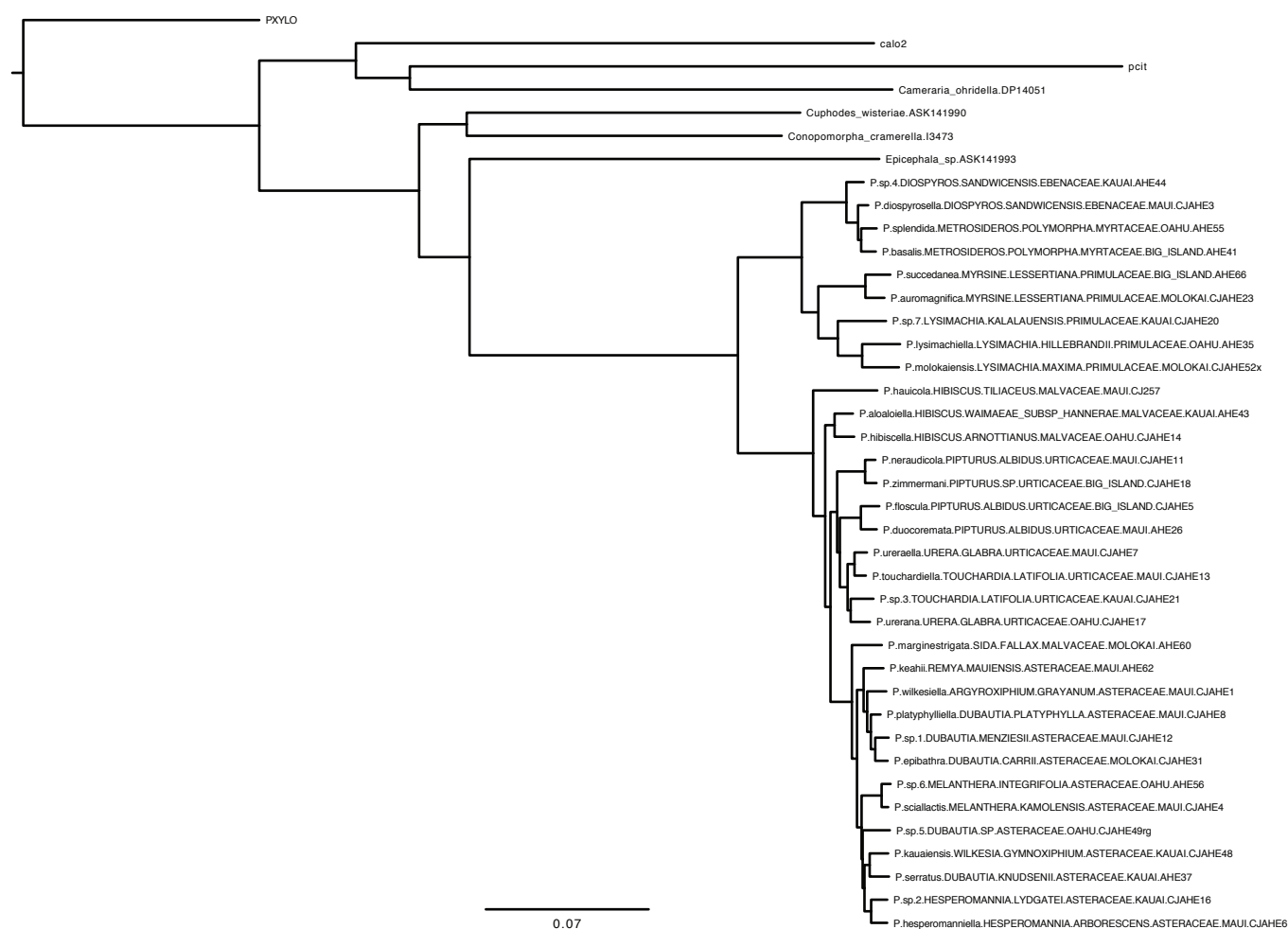




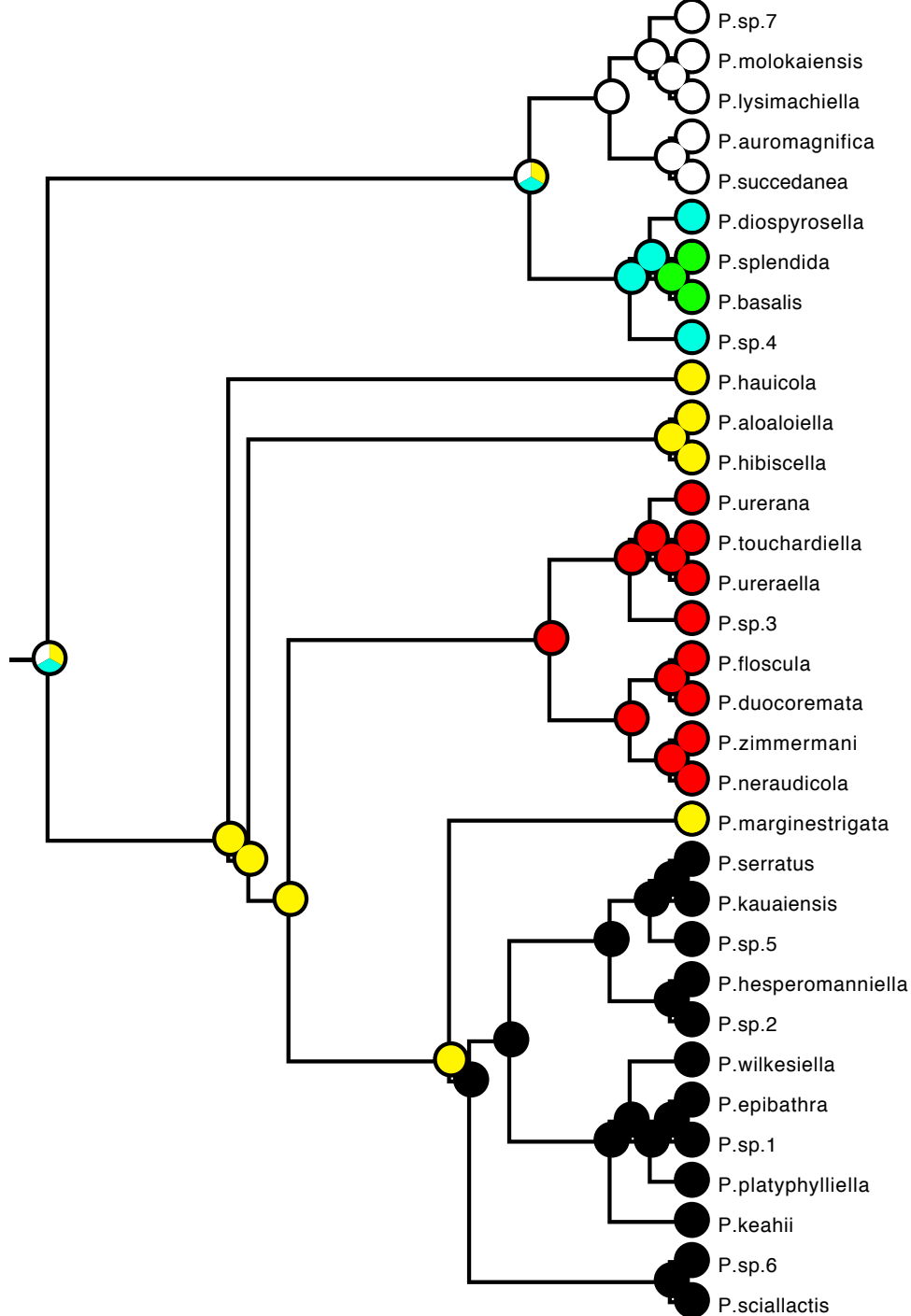
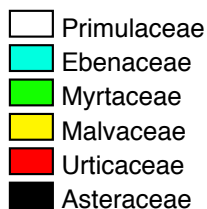








Character: Character 1
Parsimony reconstruction (Unordered) [Steps: 5]



Filename	Score	Type
507.nucprobe.b100.treefile_edited	-752170.136	Likelihood
507.nucprobe.bb1000.treefile_edited.pdf	-752173.5005	Likelihood
507.nucfull.b100.treefile_edited.pdf	-1371041.223	Likelihood
507.nucfull.bb1000.treefile_edited.pdf	-1370914.549	Likelihood
507.AA.b100.treefile_edited.pdf	-179346.2923	Likelihood
507.AA.bb1000.treefile_edited.pdf	-179244.9017	Likelihood
ASTRAL.nucprobe.out.tre_edited.pdf	0.73390495	Normalized Quartet
ASTRAL.nucfull.out.tre_edited.pdf	0.777318793	Normalized Quartet

species	plant name	plant family	Island	sequenceID	date collected	latitude	longitude
<i>P. auromagnifica</i>	<i>Myrsine lessertiana</i>	Primulaceae	Molokai	AHE_23	1/14/14	21.118379	-156.904866
<i>P. basalis</i>	<i>Metrosideros polymorpha</i>	Myrtaceae	Big Island	AHE_41	5/30/15	19.481328	-155.279352
<i>P. epibathra</i>	<i>Dubautia carrii</i>	Asteraceae	Molokai	AHE_31	7/26/15	21.135447	-156.850606
<i>P. floscula</i>	<i>Pipturus albidus</i>	Urticaceae	Big Island	AHE_5	10/24/14	20.052309	-155.639782
<i>P. hauicola</i>	<i>Hibiscus tiliaceus</i>	Malvaceae	Maui	TRANS.CJ-257	4/29/13	20.881126	-156.546767
<i>P. hibiscella</i>	<i>Hibiscus arnottianus</i>	Malvaceae	Oahu	AHE_14	7/27/14	21.362738	-157.791083
<i>P. lysimachiella</i>	<i>Lysimachia hillebrandii</i>	Primulaceae	Oahu	AHE_35	3/28/16	21.501325	-158.16538
<i>P. marginestrigata</i>	<i>Sida fallax</i>	Malvaceae	Molokai	AHE_60	12/30/13	21.200215	-157.208847
<i>P. molokaiensis</i>	<i>Lysimachia maxima</i>	Primulaceae	Molokai	AHE_52	7/26/15	-	-
<i>P. neraudicola</i>	<i>Pipturus albidus</i>	Urticaceae	Maui	AHE_11	8/9/14	20.882775	-156.574032
<i>P. sciallactis</i>	<i>Lipochaeta kamolensis</i>	Asteraceae	Maui	AHE_4	1/6/14	20.619556	-156.29476
<i>P. splendida</i>	<i>Metrosideros polymorpha</i>	Myrtaceae	Oahu	AHE_55	1/16/14	21.353205	-157.78829
<i>P. succedanea</i>	<i>Myrsine lessertiana</i>	Primulaceae	Big Island	AHE_66	4/25/16	-	-
<i>P. touchardiella</i>	<i>Touchardia latifolia</i>	Urticaceae	Maui	AHE_13	8/5/14	-	-
<i>P. ureraella</i>	<i>Urera glabra</i>	Urticaceae	Maui	AHE_7	8/12/14	20.882775	-156.574032
<i>P. urerana</i>	<i>Urera glabra</i>	Urticaceae	Oahu	AHE_17	7/27/14	-	-
<i>P. wilkesiella</i>	<i>Argyroxiphium grayanum</i>	Asteraceae	Maui	AHE_1	4/10/13	20.910519	-156.592075
<i>P. sp. 1</i>	<i>Dubautia menziesii</i>	Asteraceae	Maui	AHE_12	8/9/14	20.662853	-156.332104
<i>P. sp. 2</i>	<i>Hesperomannia lydgatei</i>	Asteraceae	Kauai	AHE_16	6/18/13	-	-
<i>P. sp. 3</i>	<i>Touchardia latifolia</i>	Urticaceae	Kauai	AHE_21	7/24/15	22.071581	-159.495277
<i>P. sp. 4</i>	<i>Diospyros sandwicensis</i>	Ebenaceae	Kauai	AHE_44	6/26/15	22.207121	-159.600315

<i>P. sp. 5</i>	<i>Dubautia sp.</i>	Asteraceae	Oahu	AHE_49	4/23/13	21.353391	157.788744	-
<i>P. sp. 6</i>	<i>Lipochaeta integrifolia</i>	Asteraceae	Oahu	AHE_56	7/6/14	21.572609	158.275253	-
<i>P. sp. 7</i>	<i>Lysimachia kalalauensis</i>	Primulaceae	Kauai	AHE_20	7/2/15	22.150762	159.636946	-
<i>P. sp. 8</i>	<i>Hibiscus waimaeae</i> spp. <i>hannerae</i>	Malvaceae	Kauai	AHE_43	7/9/15	-	-	-
<i>P. sp. 9</i>	<i>Diospyros sandwicensis</i>	Ebenaceae	Maui	AHE_3	1/4/14	20.615852	-156.29533	-
<i>P. sp. 10</i>	<i>Pipturus albidus</i>	Urticaceae	Maui	AHE_26	8/9/14	-	-	-
<i>P. sp. 11</i>	<i>Hesperomannia arborescens</i>	Asteraceae	Maui	AHE_6	8/13/14	20.904463	156.576171	-
<i>P. sp. 12</i>	<i>Wilkesia gymnoxiphium</i>	Asteraceae	Kauai	AHE_48	7/9/15	22.051957	159.658935	-
<i>P. sp. 13</i>	<i>Remya mauiensis</i>	Asteraceae	Maui	AHE_62	8/9/14	20.873753	156.618304	-
<i>P. sp. 14</i>	<i>Dubautia platyphylla</i>	Asteraceae	Maui	AHE_8	8/11/14	20.681468	156.231976	-
<i>P. sp. 15</i>	<i>Dubautia knudsenii</i>	Asteraceae	Kauai	AHE_37	8/9/14	22.071581	159.495277	-
<i>P. sp. 16</i>	<i>Pipturus sp.</i>	Urticaceae	Big Island	AHE_18	5/21/15	19.365255	155.216135	-