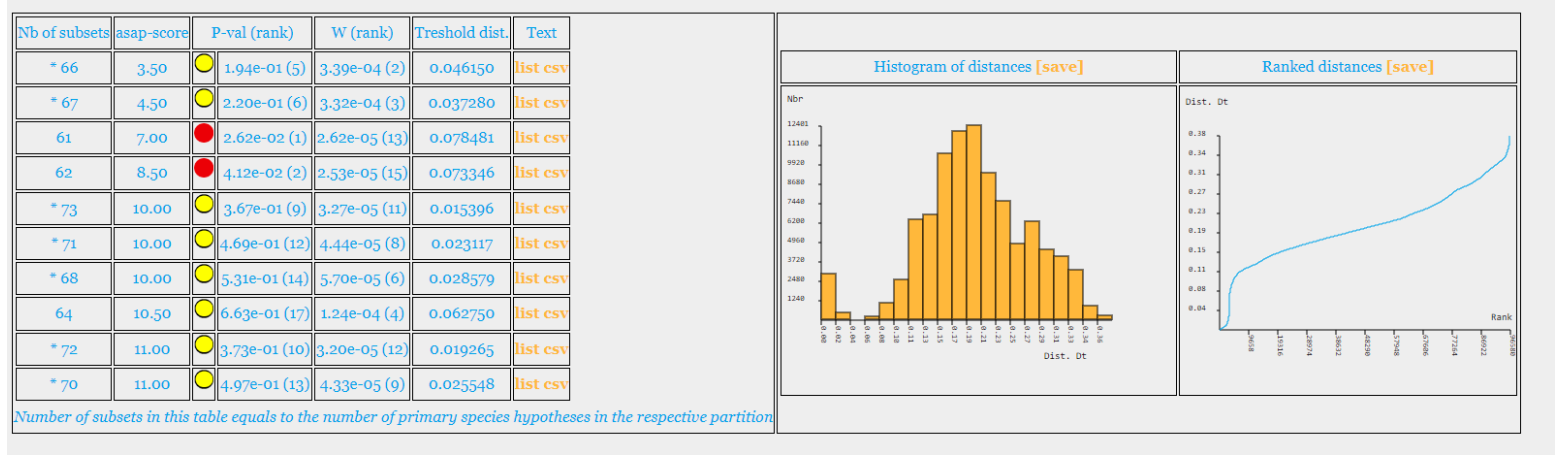


Figure S1. ASAP analysis of the COI dataset. Upper left, ASAP ten best partitions; upper central, ASAP ranked genetic distances; upper right, ASAP histogram of genetic distances; down left, voucher numbers; down right, the ten best partition identified by ASAP (each box correspond to one hypothetical species, the number of specimens included in each group is reported at the top of the box). On the top for each partition is reported the total number of hypothetical species found “Nb groups” and the ASAP score “Score”. “W” = Relative Barcode Gap Width.



[illegible]

[illegible]

RMNH_Mol_100809_Cyphoma_gibbosum										
RMNH_5004214_Cyphoma_signatum										
RMNH_5004217_Cyphoma_signatum										
IM_2013_57291_Cyphoma_sp										
IM_2013_8520_Cyphoma_intermedium										
RMNH_Mol_337802_Cyphoma_signatum										
RMNH_Mol_446893a_Cyphoma_mcgintyi										
RMNH_Mol_450534_Cyphoma_mcgintyi										
USNM_IZ_1448103_Cyphoma_gibbosum										
IM_2013_60490_Cyphoma_sp										
RMNH_Mol_446893b_Cyphoma_mcgintyi										
IM_2013_7997_Cyphoma_intermedium										
IM_2007_38930_Quasisimnia_hirasei									30	30
IM_2013_63254										
IM_2013_56966_Simnialena_uniplicata	2	2	2	2	2	2	5			
IM_2013_57299_Simnialena_uniplicata	3	3	3	3	3	3				
K116m_Simnia_avena										
K168m_Simnia_avena										
Y198m_Simnia_avena										
IM_2013_71258_Cymbovula_acicularis	9	9	9	9	9	9	9			
RMNH_Mol_100815_Cymbovula_acicularis										
RMNH_Mol_100827_Cymbovula_acicularis										
RMNH_Mol_337795_Cymbovula_acicularis										
RMNH_Mol_337796_Cymbovula_acicularis										
RMNH_Mol_337801_Cymbovula_acicularis										
RMNH_5004206_Cymbovula_acicularis										
RMNH_5004207_Cymbovula_acicularis										
RMNH_5004208_Cymbovula_acicularis										
K136m_Simnia_sp	14	14	14	14	14	14	14			
K175m_Simnia_avena										
K191m_Simnia_avena										
K193m_Simnia_avena										
K237m_Simnia_avena										
Y100m_Simnialena_rufa										
Y101m_Simnialena_rufa										
Y109m_Simnialena_rufa										
Y183m_Simnia_avena										
Y185m_Simnia_sp										
Y188m_Simnia_avena										
Y197m_Simnia_avena										
Y199m_Simnia_sp										
Y098m_Simnialena_rufa										
IM_2007_33697_Quasisimnia_robertsoni	3	3	3	3	3	3	3	3	3	
IM_2007_33698_Quasisimnia_robertsoni										
IM_2013_44511_Quasisimnia_robertsoni										
IM_2007_33689_Volva_kilburni	5	5	5	5	5	5	5	5	5	5
IM_2019_18296_Volva_kilburni										
IM_2019_16277_Volva_kilburni										
IM_2013_59053_Volva_kilburni										
IM_2007_38101_Volva_kilburni										
IM_2013_60781_Simnia_sp										
BJLinnSoc_20_Ovula_ovum	5	5	5	5	5	5	5	5	5	5
Ov_NT_1032_Ovula_ovum										
RMNH_Mol_164080_Ovula_ovum										
RMNH_Mol_164069_Ovula_ovum										
IM_2007_32155_Ovula_ovum										
IM_2013_4883_Crenavolva_striatula	5	5	5	5	5	5	5	5	5	5
RMNH_Mol_164186_Crenavolva_striatula										
Ov_CB_1087_Crenavolva_striatula										
Ov_CB_1084_Crenavolva_striatula										
Ov_CB_1094_Crenavolva_striatula										

[illegible]

Ov_NT_1005_Proximnia_sempri										
Ov_NT_1008_Proximnia_sempri										
Ov_NT_1029_Proximnia_sempri										
BAU_4548_Proximnia_sempri										
Ov_NT_1018_Proximnia_sempri										
Ov_NT_1002_Proximnia_sempri										
BAU_4556_Proximnia_sempri										
IM_2013_4426_Procalpurnus_semistriatus										
IM_2013_3686_Margovula_anulata	3	3	3	3	3	3	3	3	3	3
IM_2013_55743_Margovula_anulata										
IM_2013_55742_Margovula_anulata										
RMNH_Mol_164174_Diminovula_alabaster	2	2	2	2	2	2	2	2	2	2
RMNH_Mol_164200_Diminovula_alabaster										
IM_2007_33696_Takasagovolva_honkakujiana										
IM_2013_4461_Dentiovula_dorsuosa	5	5	5	5	5	5	5	5	5	5
RMNH_Mol_164061_Dentiovula_dorsuosa										
RMNH_Mol_164150_Dentiovula_dorsuosa										
Ov_NT_1004_Dentiovula_dorsuosa										
RMNH_Mol_164095_Dentiovula_dorsuosa										
Ov_NT_1011_Diminovula_margarita	3	3	3	3	3	3	3	3	3	3
Ov_NT_1012_Diminovula_margarita										
Ov_SP_1444_Diminovula_margarita										
IM_2019_18294_Dentiovula_oryza										
IM_2007_34027_Pedicularia_elegantissima	20	20	20	20	20	20	20	20	20	20
IM_2013_49141_Pedicularia_elegantissima										
IM_2013_49150_Pedicularia_elegantissima										
IM_2013_68397_Pedicularia_elegantissima										
IM_2013_68463_Pedicularia_elegantissima										
IM_2019_18319_Pedicularia_elegantissima										
IM_2019_18323_Pedicularia_elegantissima										
IM_2019_20024_Pedicularia_elegantissima										
IM_2013_49142_Pedicularia_elegantissima										
IM_2013_49151_Pedicularia_elegantissima										
IM_2019_18318_Pedicularia_elegantissima										
IM_2019_16272_Pedicularia_elegantissima										
IM_2019_20028_Pedicularia_elegantissima										
IM_2013_49144_Pedicularia_elegantissima										
IM_2019_18322_Pedicularia_elegantissima										
IM_2019_16270_Pedicularia_elegantissima										
IM_2019_20029_Pedicularia_elegantissima										
IM_2019_18324_Pedicularia_elegantissima										
IM_2013_65607_Pedicularia_elegantissima										
IM_2019_16271_Pedicularia_elegantissima										
BAU_4555_Archivovla_clava										
IM_2013_49449_Pedicularia_pacifica	17	18	18	18	18	18	18	18	18	18
6MAR17P1_Pedicularia_pacifica										
IM_2013_4804_Pedicularia_pacifica										
7VAN06P1_Pedicularia_pacifica										
IM_2019_18431_Pedicularia_pacifica										
IM_2013_49463_Pedicularia_pacifica										
IM_2019_9177_Pedicularia_pacifica										
IM_2013_49448_Pedicularia_pacifica										
IM_2019_67747_Pedicularia_pacifica										
BAU_4547_Pedicularia_pacifica										
IM_2013_49445_Pedicularia_pacifica										
IM_2013_55123_Pedicularia_pacifica										
IM_2013_5882_Pedicularia_pacifica										
RMNH_Mol_99021a_Pedicularia_vanderlandi										
BAU_4543_Pedicularia_pacifica										
IM_2013_4463_Pedicularia_pacifica										
7VAN17P1_Pedicularia_pacifica										

IM_2013_5905_Pedicularia_pacifica										
Ov_NT_1009_Habuprionovolva_aenigma	5	5	5	5	5	5	5	5	5	5
Ov_NT_1010_Habuprionovolva_aenigma										
RMNH_Mol_164215_Habuprionovolva_aenigma										
Ov_NT_986_Habuprionovolva_aenigma										
RMNH_Mol_164216_Habuprionovolva_aenigma										
IM_2013_18146_Hiatavolva_depressa	2	2	2	2	2	2	2	2	2	2
RMNH_Mol_164182_Hiatavolva_depressa										
IM_2019_7609_Primovula_rosewateri	4	4	4	4	4	4	4	4	4	4
RMNH_Mol_164062_Primovula_rosewateri										
IM_2019_7610_Primovula_rosewateri										
RMNH_Mol_164049_Primovula_rosewateri										
IM_2013_17977_Habuprionovolva_sp	3	3	3	3	3	3	3	3	3	3
Ov_NT_1302_Habuprionovolva_sp										
Ov_NT_1683_Habuprionovolva_sp										
RMNH_Mol_164099_Dentiovula_colobica										
IM_2013_51980_Diminovula_culmen	4	4	4	4	4	4	4	4	4	4
IM_2013_15219_Diminovula_culmen										
Ov_NT_1289_Diminovula_culmen										
Ov_NT_1682_Diminovula_culmen										
IM_2013_11744_Aclyvolva_coarctata	38	38	38	38	38	38	38	38	38	38
IM_2013_11745_Aclyvolva_coarctata										
IM_2013_54313_Aclyvolva_coarctata										
RMNH_Mol_164104_Aclyvolva_coarctata										
IM_2013_47410_Aclyvolva_coarctata										
IM_2013_51138_Aclyvolva_coarctata										
Ov_TC_1055_Aclyvolva_coarctata										
RMNH_Mol_114127_Aclyvolva_coarctata										
RMNH_Mol_164051_Aclyvolva_coarctata										
RMNH_Mol_164185_Aclyvolva_coarctata										
RMNH_Mol_337787_Aclyvolva_coarctata										
RMNH_Mol_337790_Aclyvolva_coarctata										
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RMNH_Mol_164236_Aclyvolva_coarctata										
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RMNH_Mol_164135_Aclyvolva_coarctata										
RMNH_Mol_337789_Aclyvolva_coarctata										
IM_2013_54312_Aclyvolva_coarctata										
RMNH_Mol_164234_Aclyvolva_coarctata										
IM_2019_7575_Aclyvolva_coarctata										
RMNH_Mol_164100_Aclyvolva_coarctata										
Ov_SP_1700_Diminovula_concinna	2	2	2	2	2	2	2	2	2	2
Diminovula_concinna										
Ov_CB_1057_Aclyvolva_lanceolata	14	14	14	14	14	14	14	14	14	14

RMNH_Mol_164143_Aclyvolva_lanceolata
RMNH_Mol_164152_Aclyvolva_lanceolata
RMNH_Mol_164154_Aclyvolva_lanceolata
RMNH_Mol_164179_Aclyvolva_lanceolata
RMNH_Mol_164183_Aclyvolva_lanceolata
RMNH_Mol_164190_Aclyvolva_lanceolata
RMNH_Mol_164195_Aclyvolva_lanceolata
RMNH_Mol_164169_Aclyvolva_lanceolata
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RMNH_Mol_337788_Aclyvolva_lanceolata





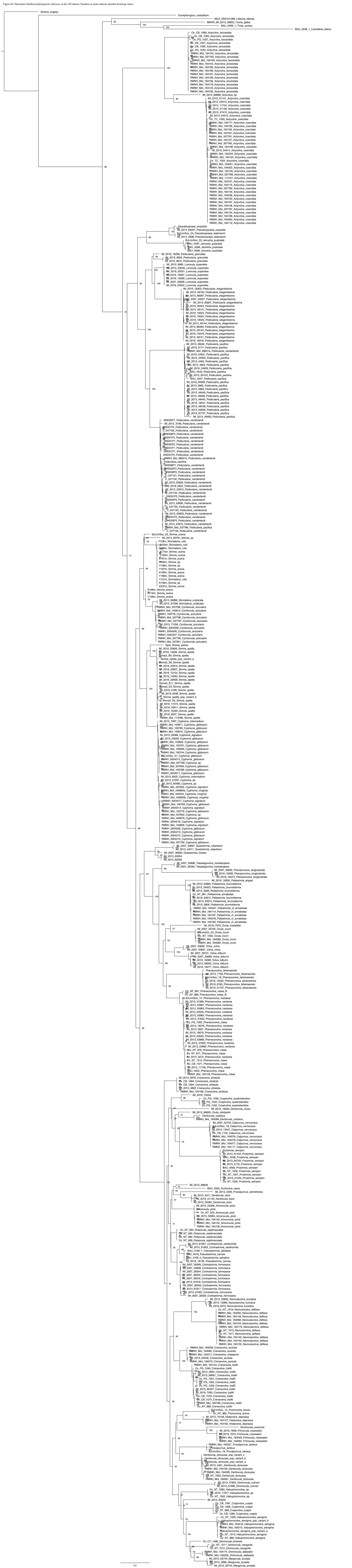
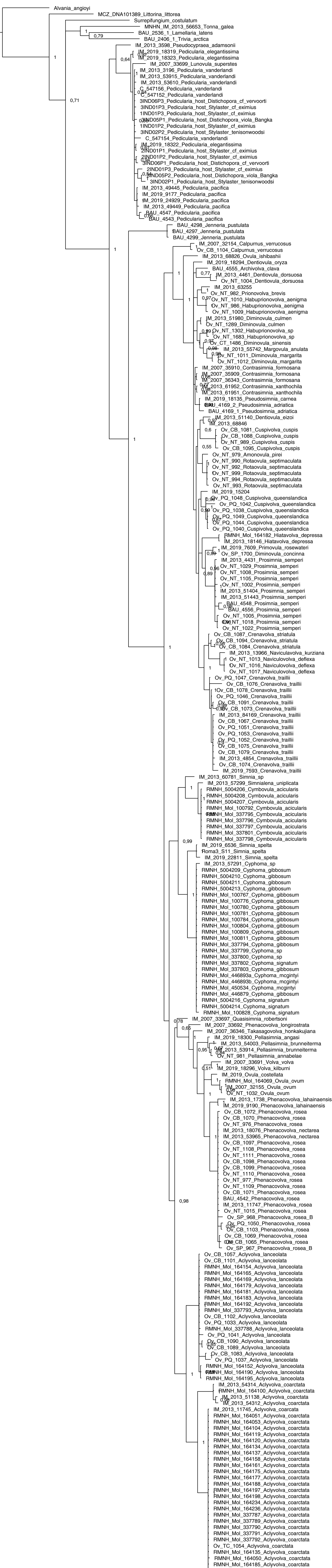


Figure S5. Maximum Likelihood phylogenetic inference on the 28S dataset. Nodes at nodes indicate ultrafast bootstrap values.





Supplementary Material: tables

Table S1. List of gastropod samples used in this study, along with voucher registration numbers, collection localities, number of localities corresponding to orange points on the map (Fig. 2), cnidarian hosts and GenBank accession numbers for sequences; the names correspond to the morphological identification of each specimen (PSH); * indicates samples included in the combined dataset used for the macroevolutionary analysis; ° indicates identification of the coral host based on both morphology and molecular data.

Table S2. List of cnidarians associated with ovulids samples used in this study, along with voucher registration numbers, collection localities, and GenBank accession numbers for sequences.