

Supplementary Material

A new genus of bamboo coral (Octocorallia: Scleralcyonacea: Keratoisididae) from the Whittard Canyon, Ireland, Northeast Atlantic

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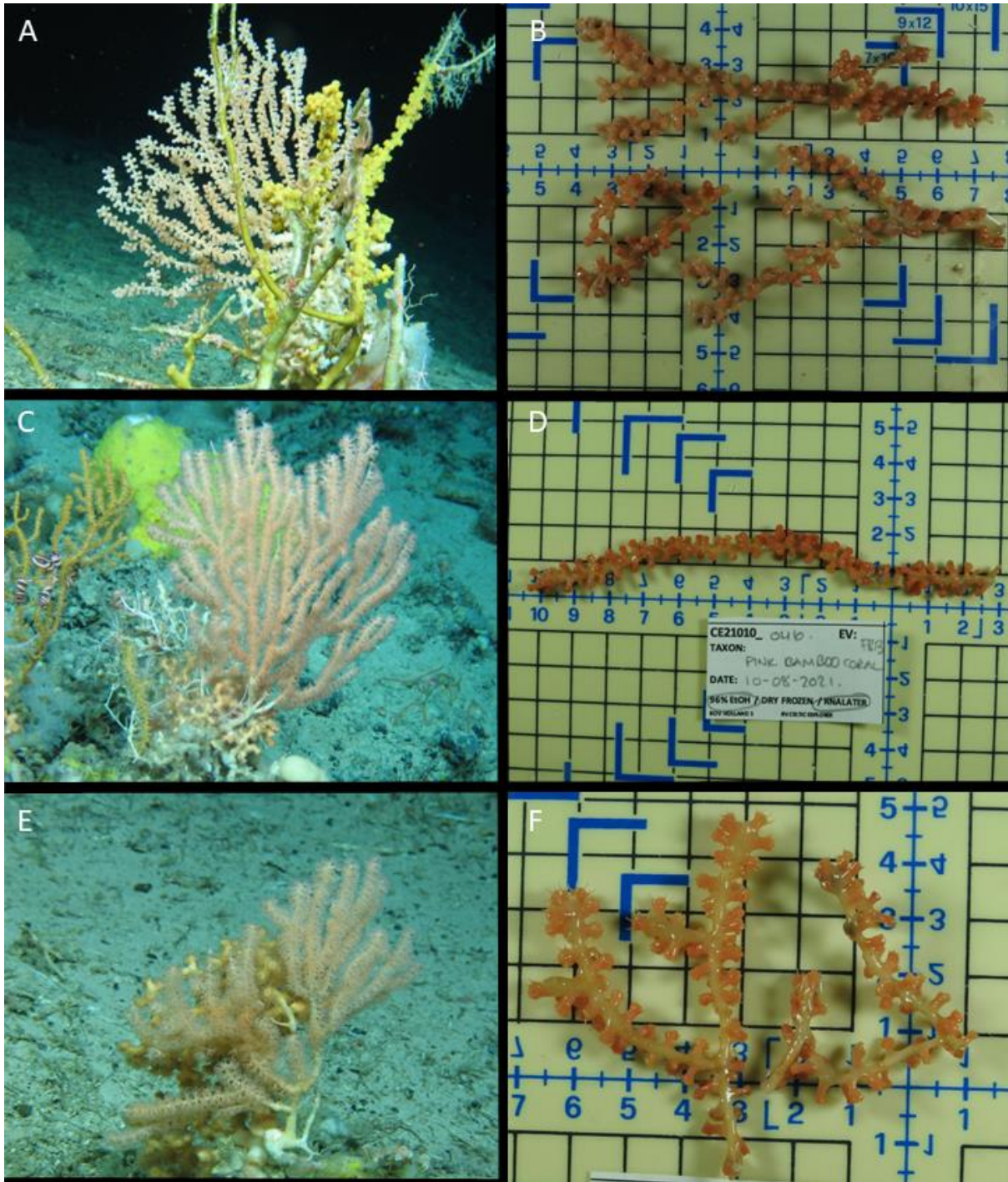


Figure S1. Imagery of paratypes of *Explorisis katharina* A-B USNM1704356, C-D USNM1704369, E-F USNM1704370.

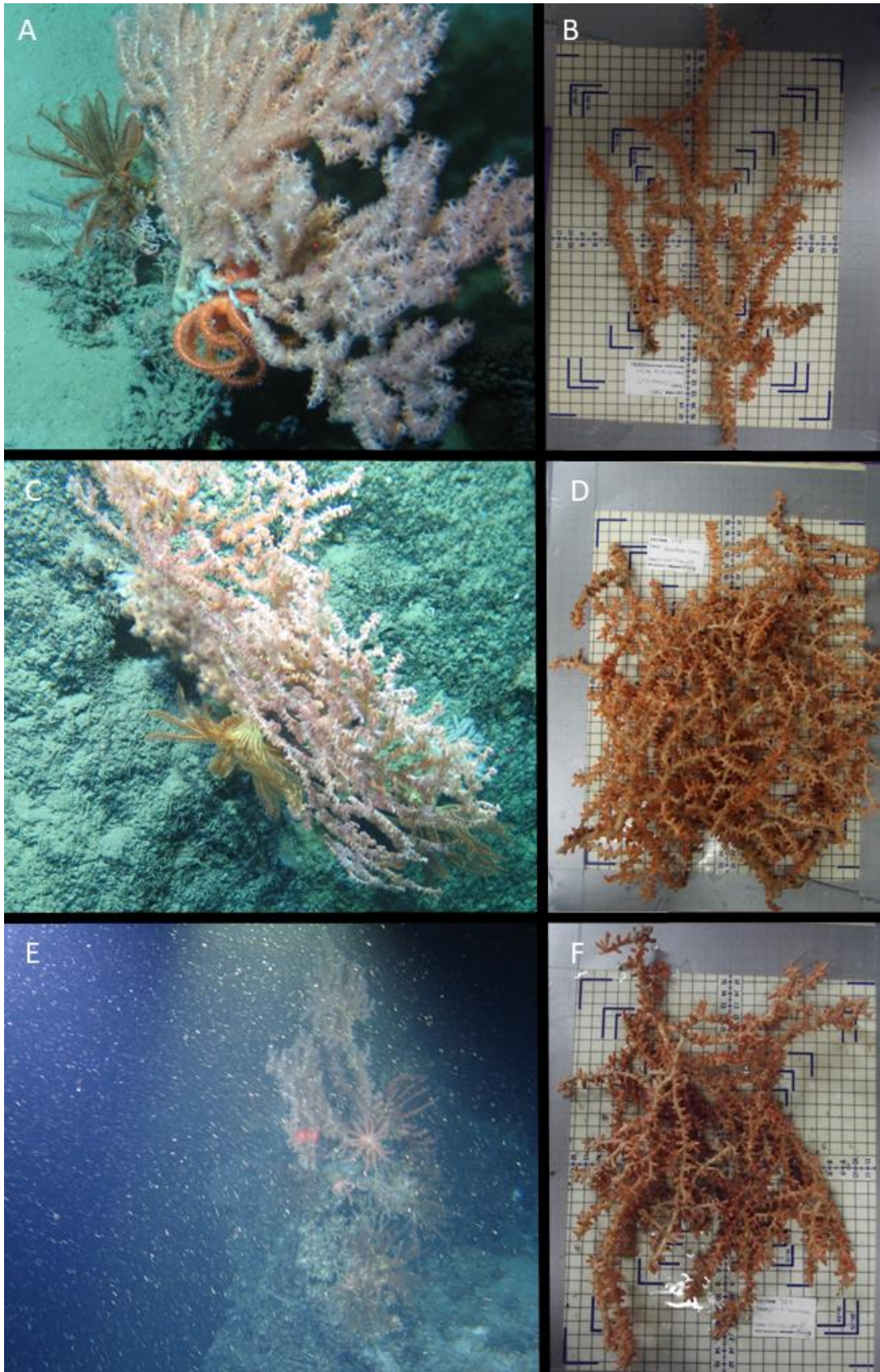


Figure S2 Imagery of paratypes of *Explorisis poppyae*. A-B USNM1593520, C-D USNM1593521, E-F USNM1593522, G-H USNM1593523, I-J USNM1593524, J-K USNM1593525, M-N, USNM1593526, O, USNM1691939.

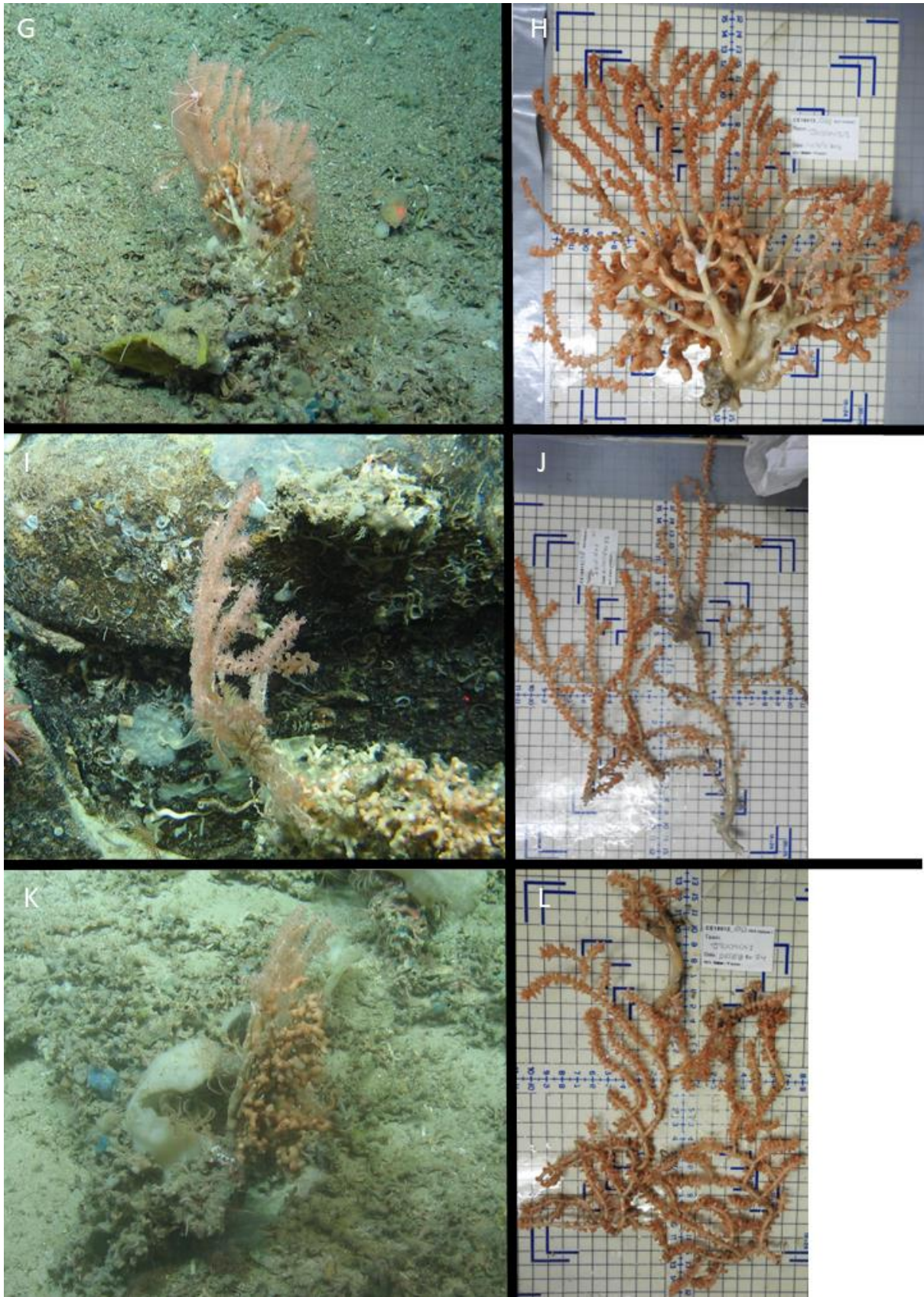


Figure S2 (Cont.)



Figure S2 (Cont.)

A

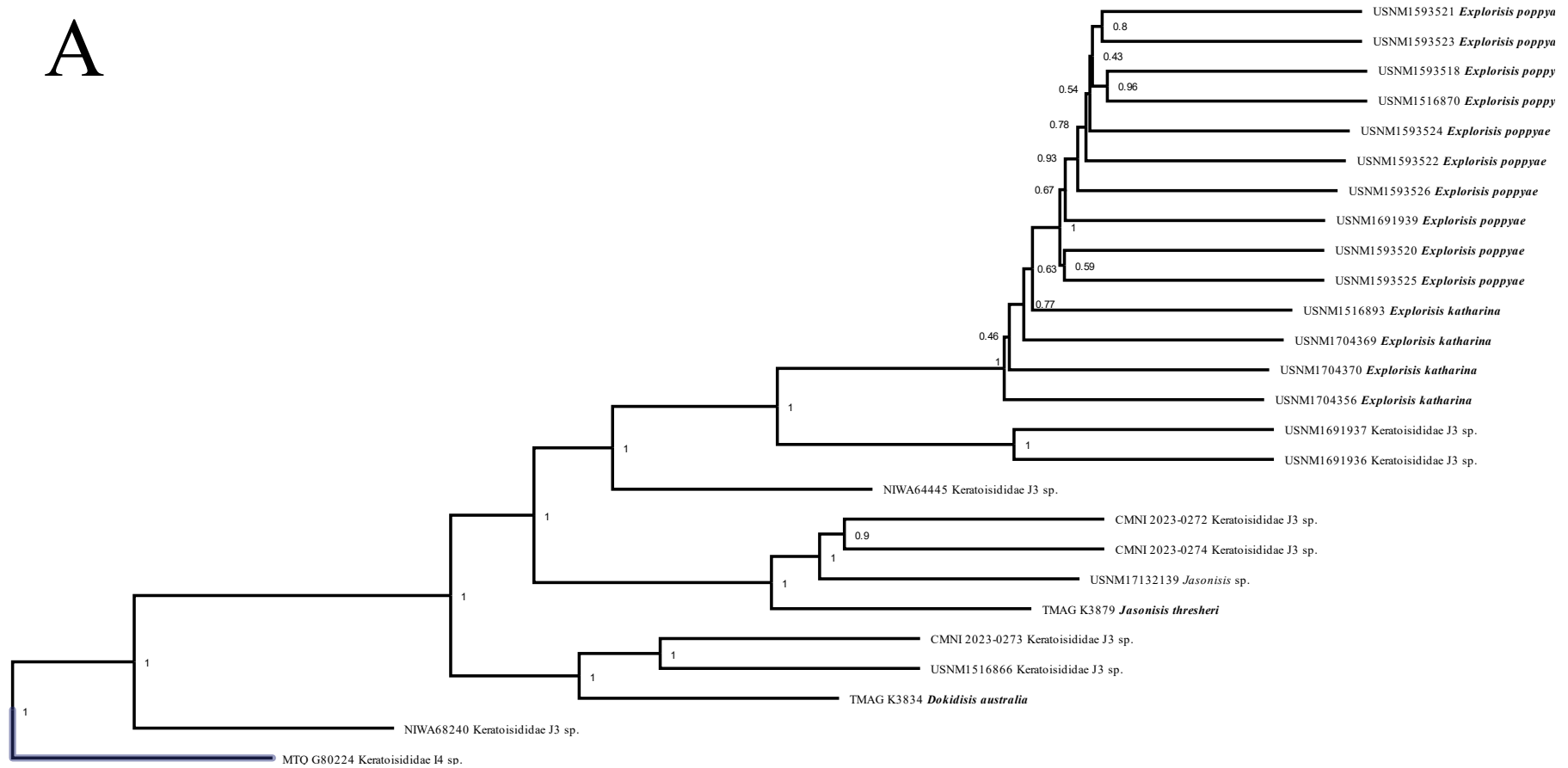


Figure S3. ASTRAL phylogenomic reconstructions generated from the (A) 50% and (B) 75% taxon occupancy matrix.

B

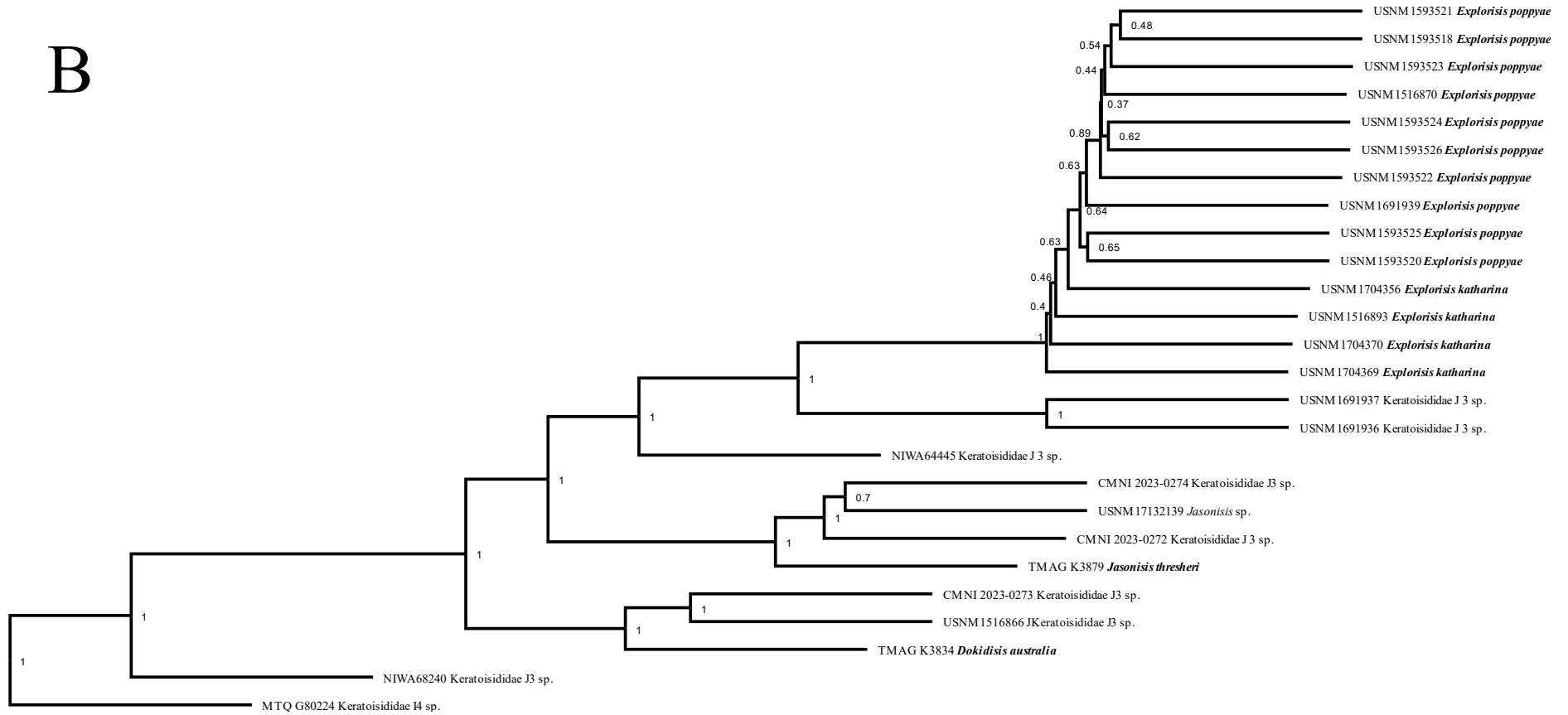


Figure S3 (Cont.)

Table S1. Conserved elements

LAB ID	Museum Accession	Taxonomic ID	Watling <i>et al.</i> (2022) group	Number of UCEs	SRA Accession 1	SRA reference 1	SRA Accession 2	SRA reference 2	Latitude	Long	Depth (m)
BAM004	USNM1593524	<i>Explorisis poppyae</i>	J3	1722	SRR25308376	Morrissey <i>et al</i> 2023			54.1	-12.4	1397
BAM026	USNM1593518	<i>Explorisis poppyae</i>	J3	1596	SRR25308379	Morrissey <i>et al</i> 2023			48.6	-10.7	1678
BAM027	USNM1593526	<i>Explorisis poppyae</i>	J3	1658	SRR25308380	Morrissey <i>et al</i> 2023			48.6	-10.7	1599
BAM037	MTQ G80224	<i>Tridentisis</i> sp.	I4	1657	SRR25308361	Morrissey <i>et al</i> 2023			-14.0	146.6	1453
BAM052	NIWA64445	Keratoisididae J3 sp.	J3	1672	SRR25308353	Morrissey <i>et al</i> 2023			-68.1	-179.3	1180
BAM055	NIWA68240	Keratoisididae J3 sp.	J3	1632	SRR25308352	Morrissey <i>et al</i> 2023			-66.0	-176.0	1709
BAM070	USNM1593525	<i>Explorisis poppyae</i>	J3	1746	SRR25308339	Morrissey <i>et al</i> 2023			54.1	-12.6	1374
BAM071	USNM1593520	<i>Explorisis poppyae</i>	J3	1766	SRR25308338	Morrissey <i>et al</i> 2023			48.6	-10.7	1653
BAM072	USNM1593521	<i>Explorisis poppyae</i>	J3	1669	SRR25308316	Morrissey <i>et al</i> 2023			48.6	-10.7	1599
BAM073	USNM1593522	<i>Explorisis poppyae</i>	J3	1673	SRR25308315	Morrissey <i>et al</i> 2023			48.6	-10.7	1613
BAM074	USNM1593523	<i>Explorisis poppyae</i>	J3	1648	SRR25308314	Morrissey <i>et al</i> 2023			54.1	-12.6	1361
BAM101	CMNI 2023-0272	Keratoisididae J3 sp.	J3	1590	SRR25308326	Morrissey <i>et al</i> 2023			50.6	-46.2	1722
BAM102	CMNI 2023-0273	Keratoisididae J3 sp.	J3	1549	SRR25308325	Morrissey <i>et al</i> 2023			48.2	-43.9	1363-2463
BAM103	CMNI 2023-0274	Keratoisididae J3 sp.	J3	1610	SRR25308324	Morrissey <i>et al</i> 2023			46.3	-44.6	2907
BAM107	USNM1691939	<i>Explorisis poppyae</i>	J3	1815	SRR25308321	Morrissey <i>et al</i> 2023	SRR27891906	Morrissey <i>et al</i> 2024	54.1	-12.5	1392
BAM169	USNM1516893	<i>Explorisis katharina</i>	J3	1175	SRR27927871	This study			48.4672	-10.399	2669
BAM154	USNM1704356	<i>Explorisis katharina</i>	J4	809	SRR28682496	This study			55.37	-19.84	1286
BAM167	USNM1704369	<i>Explorisis katharina</i>	J5	1035	SRR28682495	This study			55.22	-19.88	1393
BAM168	USNM1704370	<i>Explorisis katharina</i>	J6	975	SRR28682494	This study			55.22	-19.87	1241
BAM189	TMAG-K3834	<i>Dokidisis australis</i>	J3	806	SRR27927870	This study			144.6	-45.4	3256
DM077	USNM17132139	<i>Jasonisis</i> sp.	J3	600	SRR27940290	Morrissey <i>et al</i> 2024			X	X	-2950
OCT032	USNM1516866	<i>Jasonisis</i> J3	J3	1632	SRR25308291	Morrissey <i>et al</i> 2023			48.6	-10.8	2800
OCT052	TMAG K3879	<i>Jasonisis thresheri</i>	J3	1801	SRR18587854	McFadden <i>et al.</i> 2022			-45.4	144.6	2063
OCT082	USNM1516870	Keratoisididae J3 sp.	J3	1795	SRR25308382	Morrissey <i>et al</i> 2023			49.2	-10.4	1774
OCT128	USNM1691936	Keratoisididae J3 sp.	J3	1801	SRR25308389	Morrissey <i>et al</i> 2023			X	X	X
OCT129	USNM1691937	Keratoisididae J3 sp.	J3	1827	SRR25308390	Morrissey <i>et al</i> 2023			X	X	X

Table S2. Mitogenome Information

Museum accession	Organism	Mitogenome accession1	Mitogenome reference	SRA Accession 1	SRA reference 1	SRA Accession 2	SRA reference 2
USNM1704365	Keratoisididae D2 sp.	OR326697	Morrissey <i>et al</i> 2024	SRR27940289	Morrissey <i>et al</i> 2024		
USNM1704367	Keratoisididae D1 sp.	OR333848	Morrissey <i>et al</i> 2024	N/A			
CMNI2023-0271	Keratoisididae C1 sp.	OR326693	Morrissey <i>et al</i> 2024	SRR25308327	Morrissey <i>et al</i> 2023		
MNHN-IK-2011-1209	Keratoisididae D2 sp.	OR326695	Morrissey <i>et al</i> 2024	SRR25308307	Morrissey <i>et al</i> 2023		
MNHN-IK-2012-17053	<i>Keratoisis</i> sp.	OR326696	Morrissey <i>et al</i> 2024	SRR25308297	Morrissey <i>et al</i> 2023		
MTQ G80213	Keratoisididae C1 sp.	OR326690	Morrissey <i>et al</i> 2024	SRR25308359	Morrissey <i>et al</i> 2023		
NIWA28280	<i>Keratoisis wrightii</i>	OR326691	Morrissey <i>et al</i> 2024	SRR25308355	Morrissey <i>et al</i> 2023		
NTM NORFANZ 36.10	<i>Isidooides armata</i>	OL6162402	Muthye <i>et al</i> 2022	SRR10443694	Quattrini <i>et al.</i> 2020		
USNM17132139	<i>Jasonisis</i> sp.	OR326699	Morrissey <i>et al</i> 2024	SRR27940290	Morrissey <i>et al</i> 2024		
USNM1516875	Keratoisididae B1 sp.	OL6162422	Muthye <i>et al</i> 2022	SRR6178983	Quattrini <i>et al.</i> 2018		
USNM1516893	<i>Explorisis katharina</i>	PP317822	This study	SRR27927871	This study		
USNM1704356	<i>Explorisis katharina</i>	PP761327	This study	SRR28682496	This study		
USNM1704369	<i>Explorisis katharina</i>	PP761328	This study	SRR28682495	This study		
USNM1704370	<i>Explorisis katharina</i>	PP761329	This study	SRR28682494	This study		
USNM1593468	Keratoisididae D1 sp.	OR326681	Morrissey <i>et al</i> 2024	SRR25308394	Morrissey <i>et al</i> 2023	SRR27891912	Morrissey <i>et al</i> 2024
USNM1593469	Keratoisididae D1 sp.	OR326700	Morrissey <i>et al</i> 2024	SRR25308318	Morrissey <i>et al</i> 2023		
USNM1593477	Keratoisididae B1 sp.	OR326683	Morrissey <i>et al</i> 2024	SRR25308343	Morrissey <i>et al</i> 2023	SRR27891911	Morrissey <i>et al</i> 2024
USNM1593494	Keratoisididae D2 sp.	OR326684	Morrissey <i>et al</i> 2024	SRR25308391	Morrissey <i>et al</i> 2023	SRR27891910	Morrissey <i>et al</i> 2024
USNM1593497	Keratoisididae I1 sp.	OR326682	Morrissey <i>et al</i> 2024	SRR27940291	Morrissey <i>et al</i> 2024		
USNM1593499	Keratoisididae I1 sp.	OR326685	Morrissey <i>et al</i> 2024	SRR25308371	Morrissey <i>et al</i> 2023	SRR27891909	Morrissey <i>et al</i> 2024
USNM1593509	Keratoisididae I1 sp.	OR326686	Morrissey <i>et al</i> 2024	SRR25308375	Morrissey <i>et al</i> 2023	SRR27891908	Morrissey <i>et al</i> 2024
USNM1593512	Keratoisididae C1 sp.	OR326687	Morrissey <i>et al</i> 2024	SRR25308377	Morrissey <i>et al</i> 2023		
USNM1593513	Keratoisididae C1 sp.	OR326694	Morrissey <i>et al</i> 2024	SRR25308310	Morrissey <i>et al</i> 2023		
USNM1593516	Keratoisididae C1 sp.	OR326688	Morrissey <i>et al</i> 2024	SRR25308378	Morrissey <i>et al</i> 2023		
USNM1593520	<i>Explorisis poppyae</i>	OR326692	Morrissey <i>et al</i> 2024	SRR25308338	Morrissey <i>et al</i> 2023		
USNM1593537	Keratoisididae F1 sp.	OR326689	Morrissey <i>et al</i> 2024	SRR25308366	Morrissey <i>et al</i> 2023	SRR27891907	Morrissey <i>et al</i> 2024
USNM1611489	<i>Acanella</i> sp.	OL6161962	Muthye <i>et al</i> 2022	SRR10443687	Quattrini <i>et al.</i> 2020		
USNM1691939	<i>Explorisis poppyae</i>	OR326698	Morrissey <i>et al</i> 2024	SRR25308321	Morrissey <i>et al</i> 2023	SRR27891906	Morrissey <i>et al</i> 2024
YPM:IZ:044539/BAL208-1	<i>Tridentisis candelabrum</i>	EF6225343	Brugler & France 2008	SRR25308361	Morrissey <i>et al</i> 2023		
YPM:IZZ:44537	<i>Acanella eburnea</i>	NC0110164	van der Ham <i>et al</i> 2009	N/A			

Table S3. Alignment summary

Dataset	Method	Taxa	Number of loci	Mean locus length (bp)	Total alignment length (bp)
Mitogenomes	<i>IQTree</i> and <i>MrBayes</i>	30	14 PCGs	N/A	16457
Conserved elements phylogeny					
75% matrix	<i>IQTree</i> and <i>ASTRAL III</i>	129	778	1601	1245685
50% matrix	<i>IQTree</i> and <i>ASTRAL III</i>	129	2010	1339	2691841

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