

Supplementary Material

Tracing the evolution of bioluminescent light organs across the deep-sea shrimp family Sergestidae using a genomic skimming and phylogenetic approach

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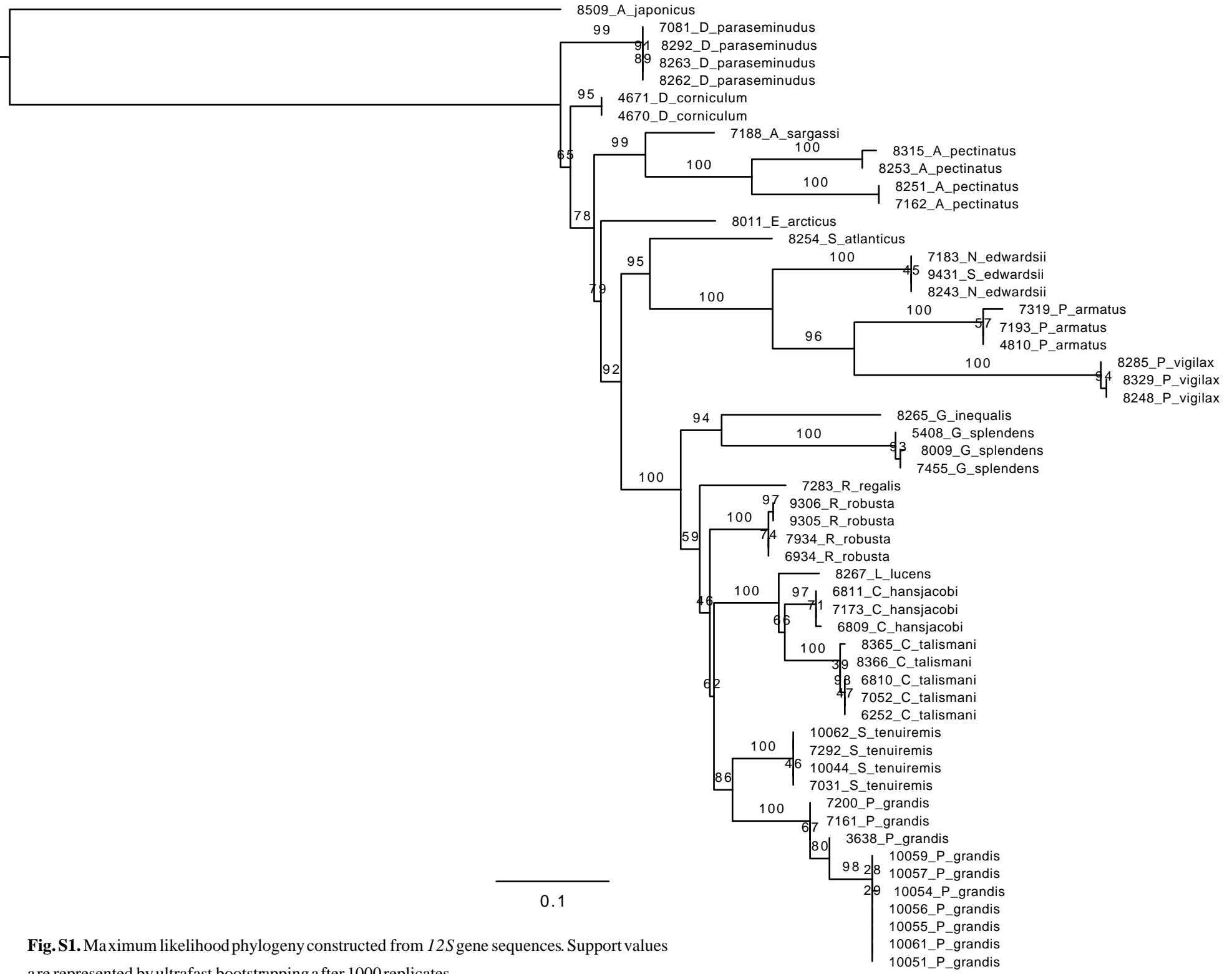


Fig. S1. Maximum likelihood phylogeny constructed from *12S* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

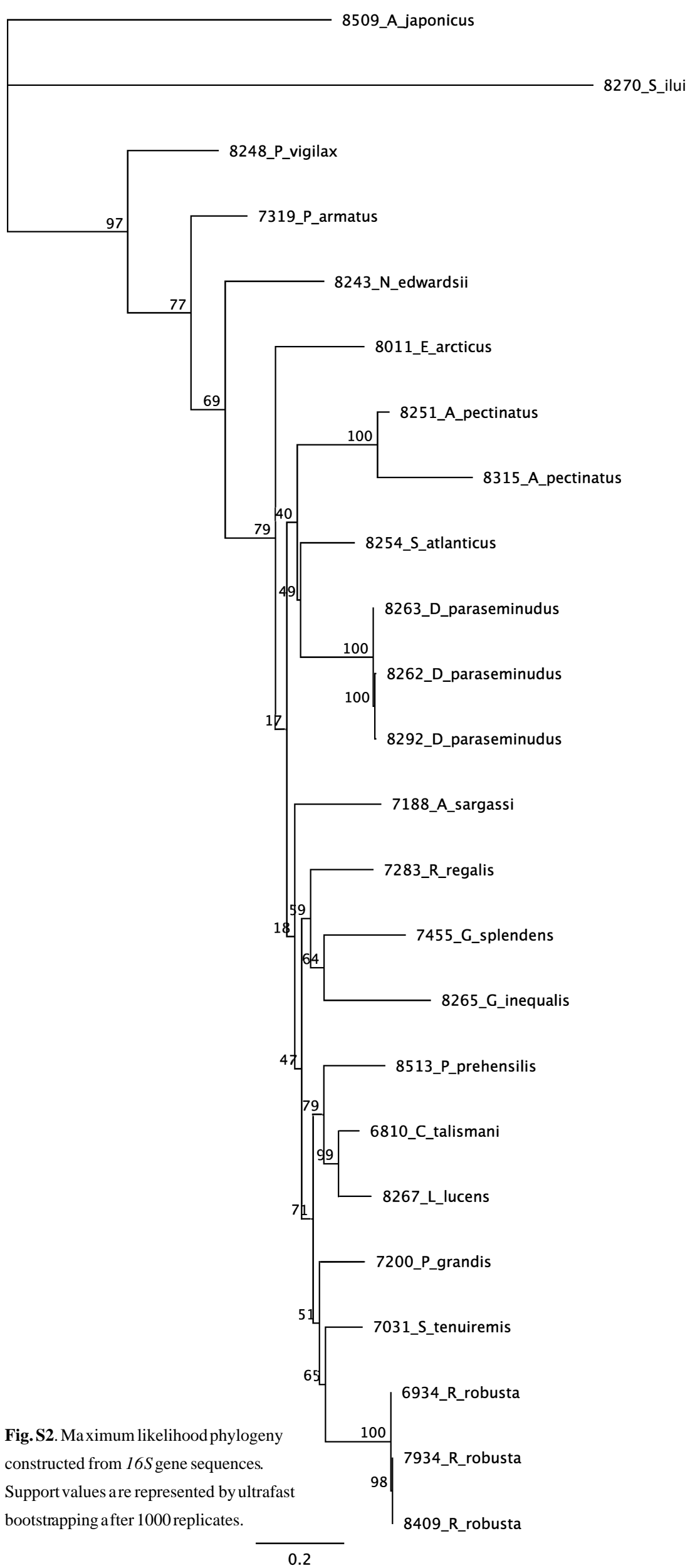


Fig. S2. Maximum likelihood phylogeny constructed from *16S* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

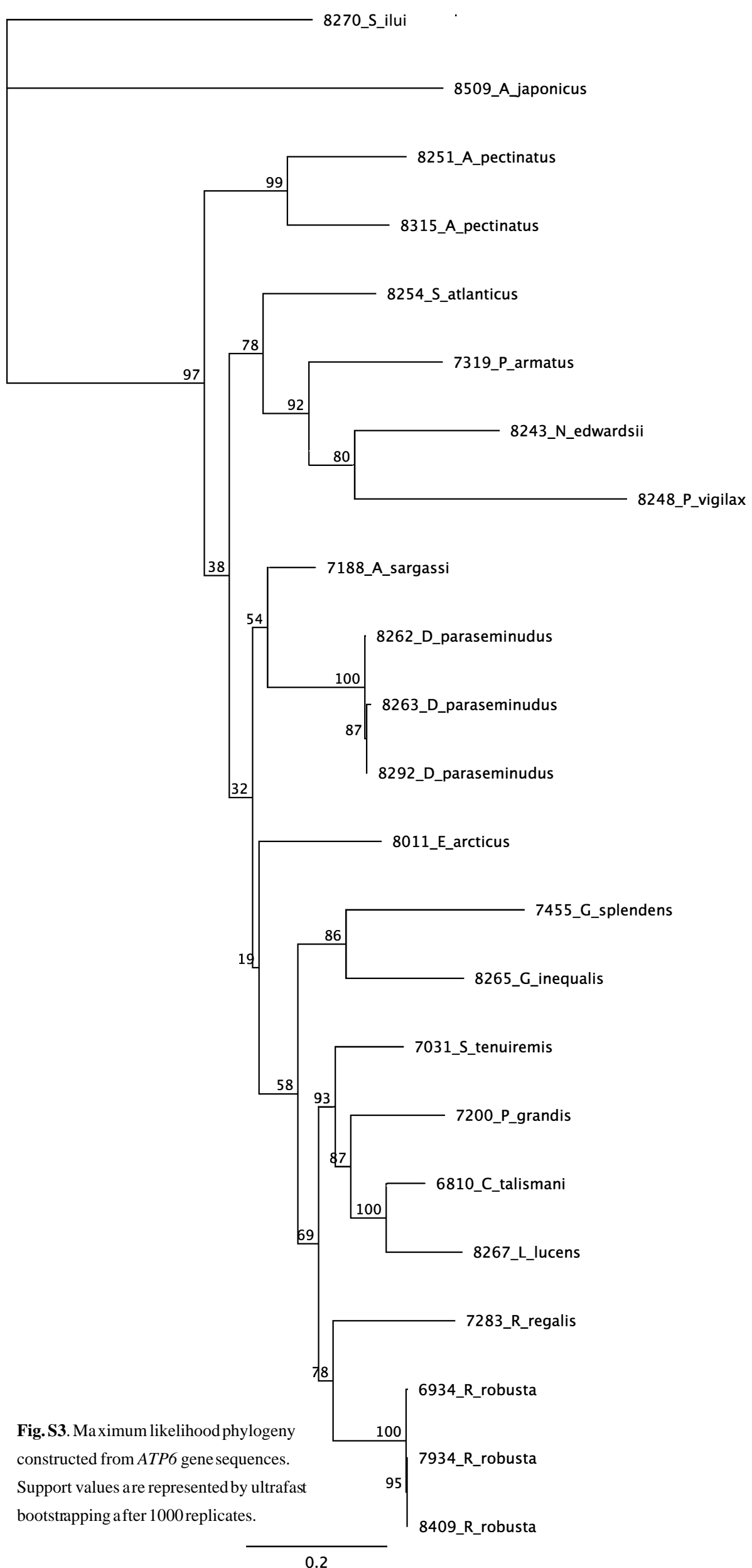


Fig. S3. Maximum likelihood phylogeny constructed from *ATP6* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

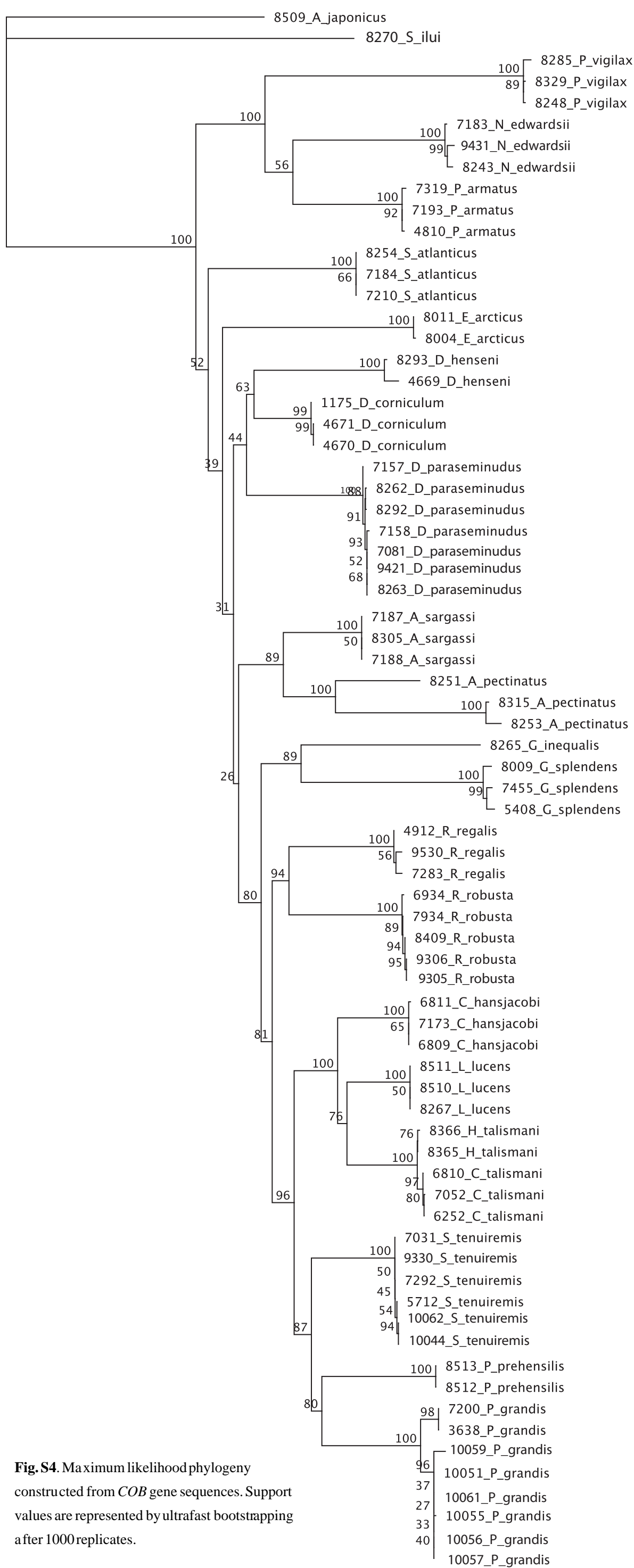


Fig. S4. Maximum likelihood phylogeny constructed from *COB* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

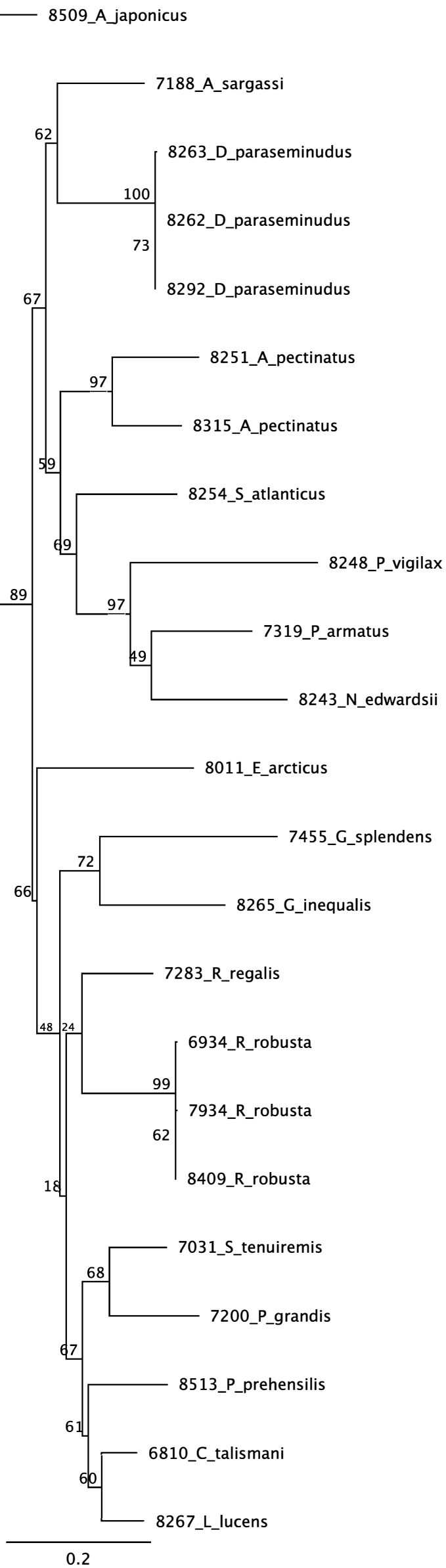


Fig. S5. Maximum likelihood phylogeny constructed from *COI* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

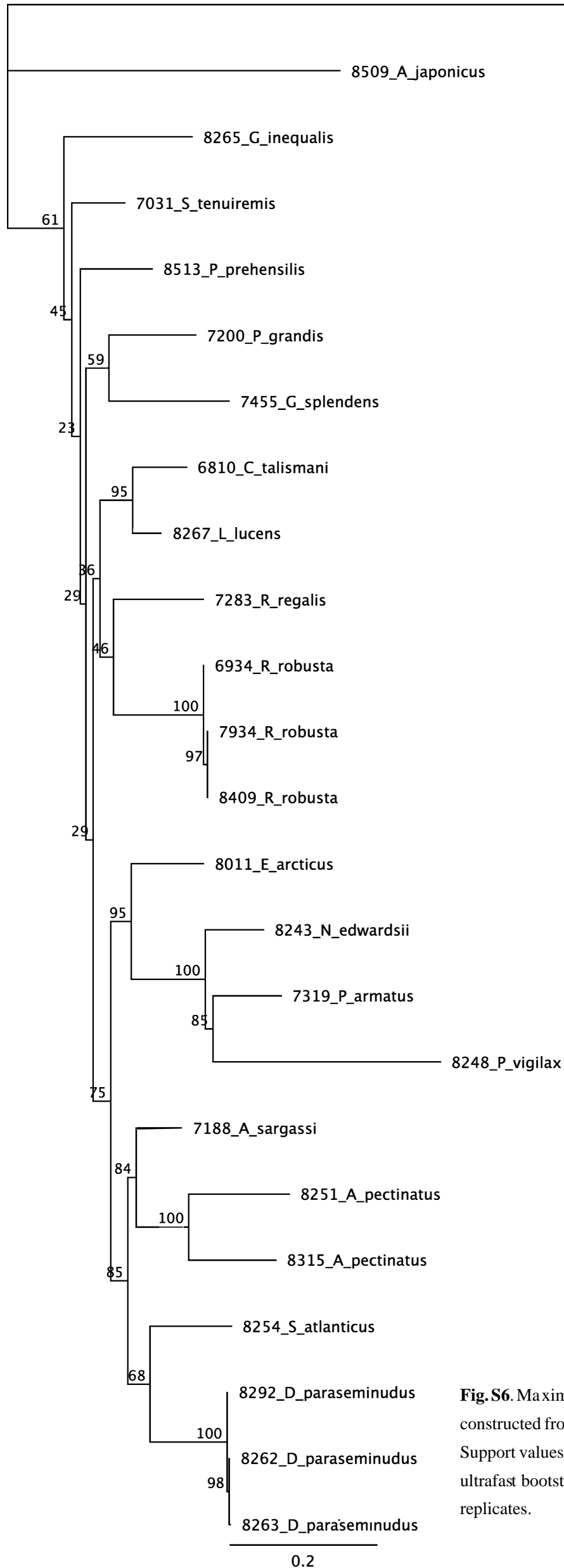


Fig. S6. Maximum likelihood phylogeny constructed from *COX2* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

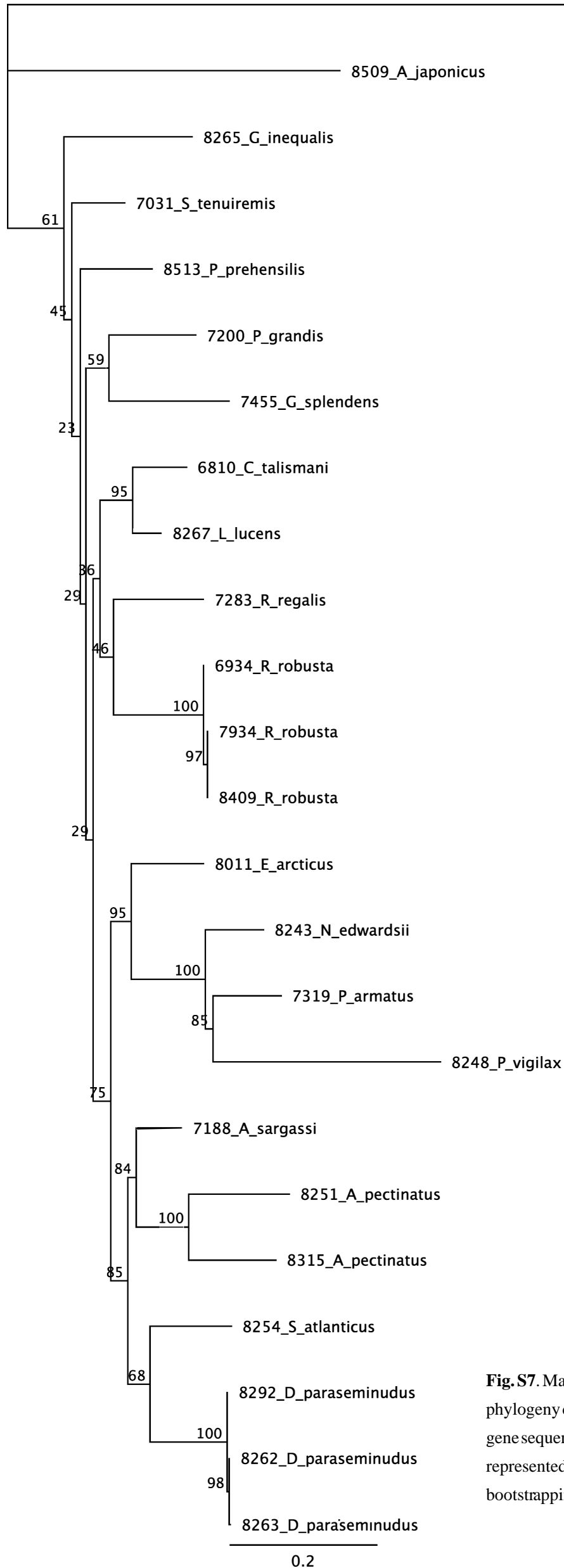


Fig. S7. Maximum likelihood phylogeny constructed from *COX3* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

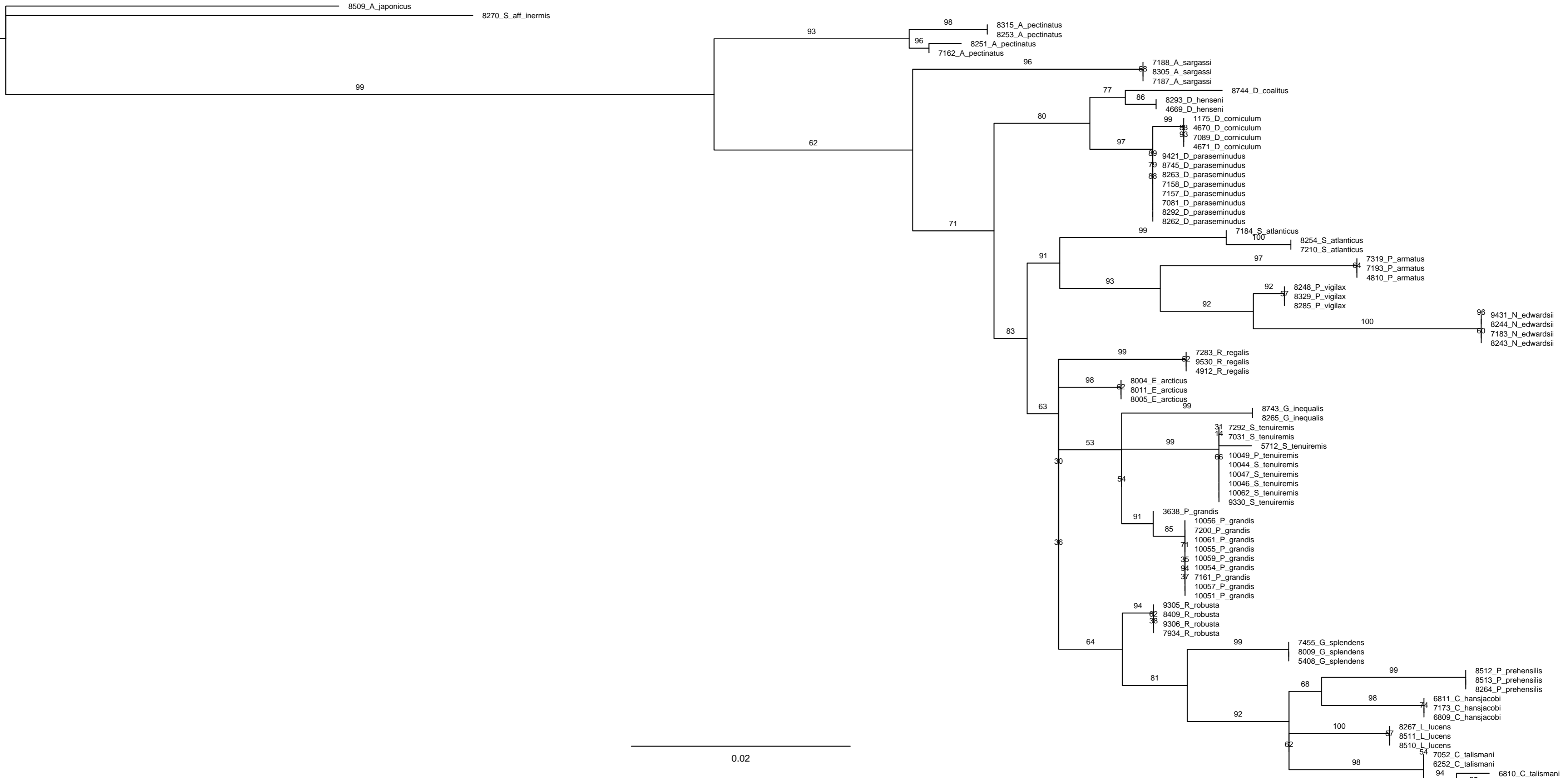


Fig. S8. Maximum likelihood phylogeny constructed from *H3* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

8509_A_japonicus

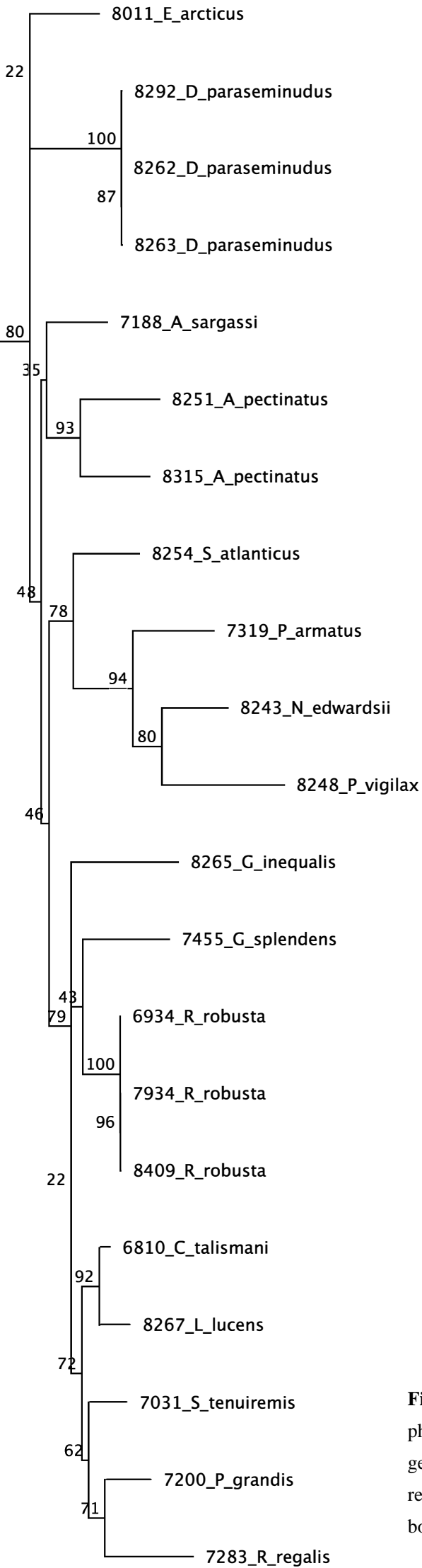


Fig. S9. Maximum likelihood phylogeny constructed from *NAD1* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

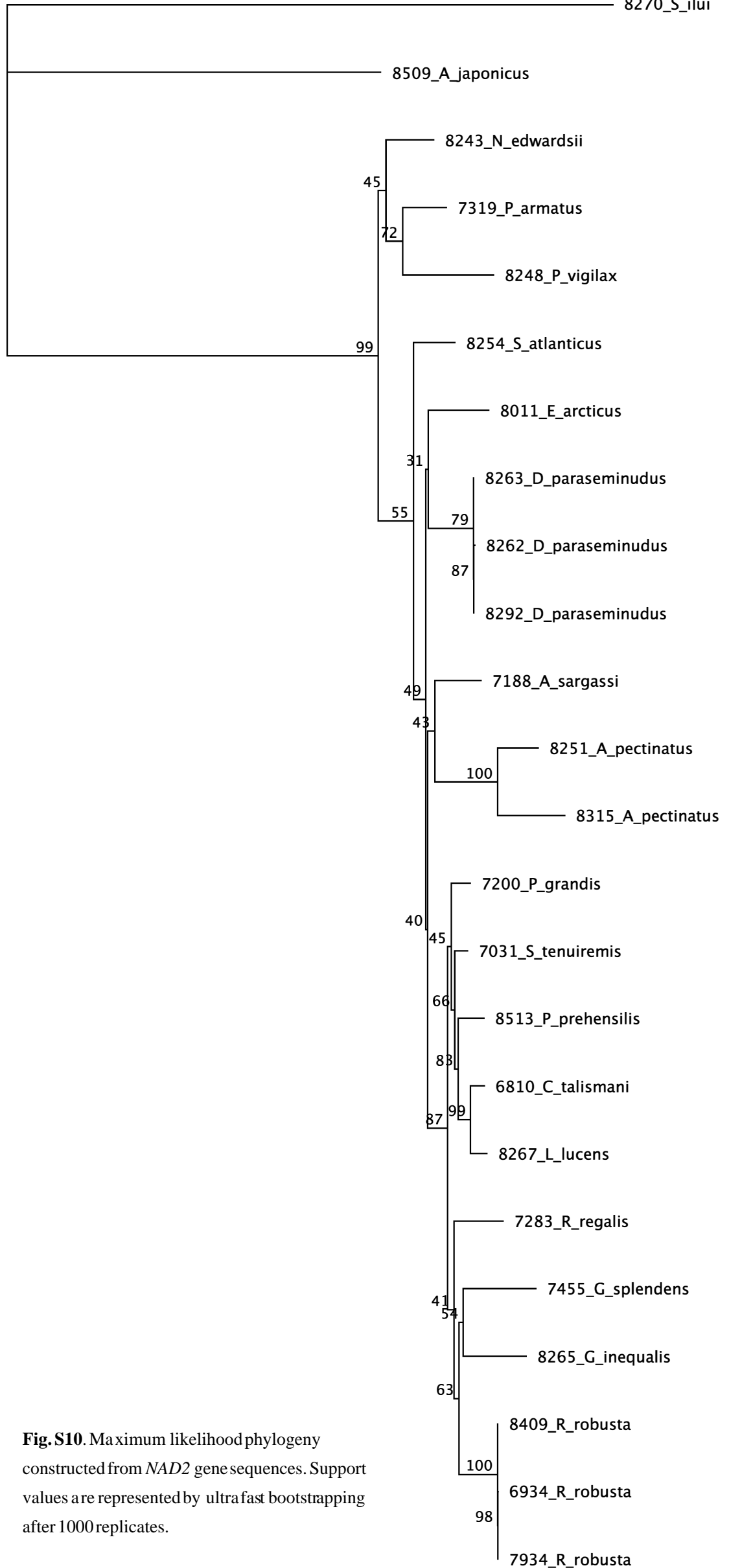


Fig. S10. Maximum likelihood phylogeny constructed from *NAD2* gene sequences. Support values are represented by ultra fast bootstrapping after 1000 replicates.

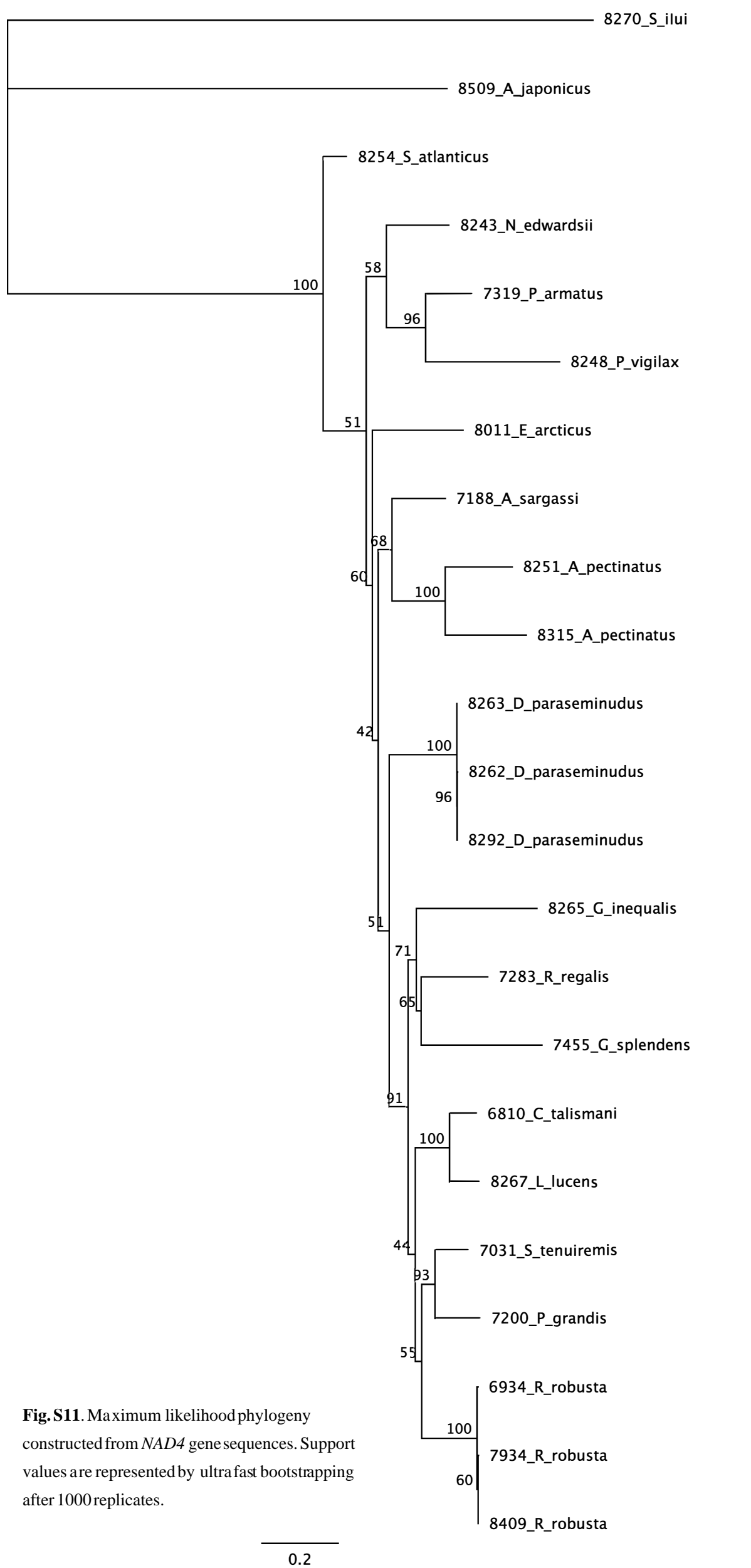


Fig. S11. Maximum likelihood phylogeny constructed from *NAD4* gene sequences. Support values are represented by ultra fast bootstrapping after 1000 replicates.

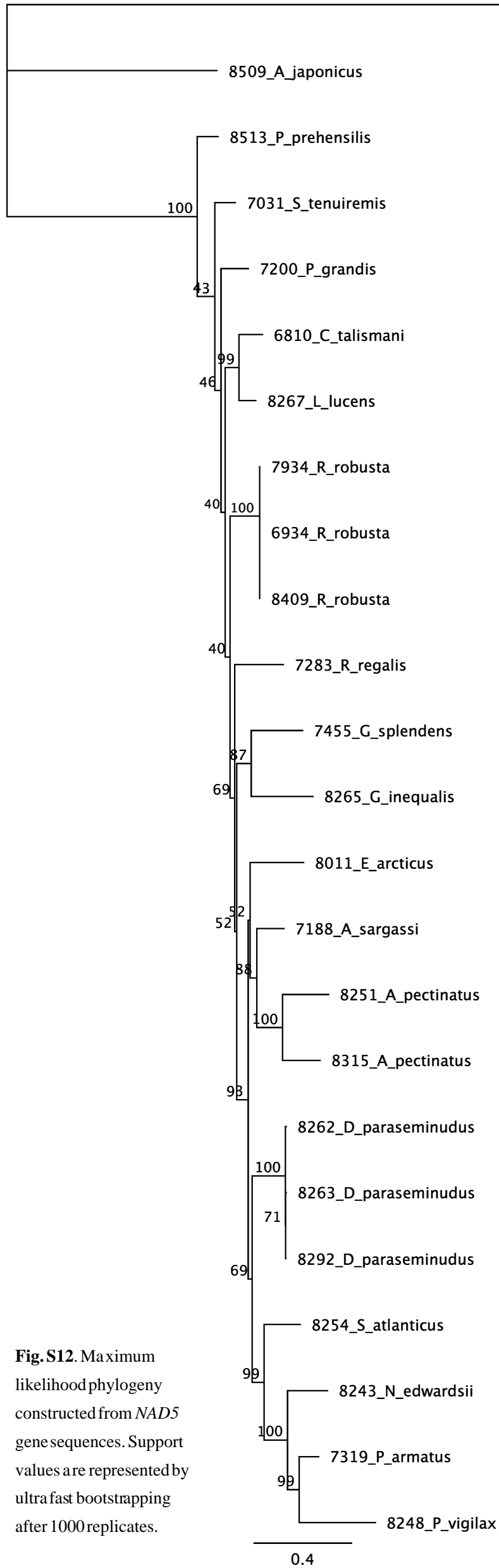


Fig. S12. Maximum likelihood phylogeny constructed from *NAD5* gene sequences. Support values are represented by ultra fast bootstrapping after 1000 replicates.

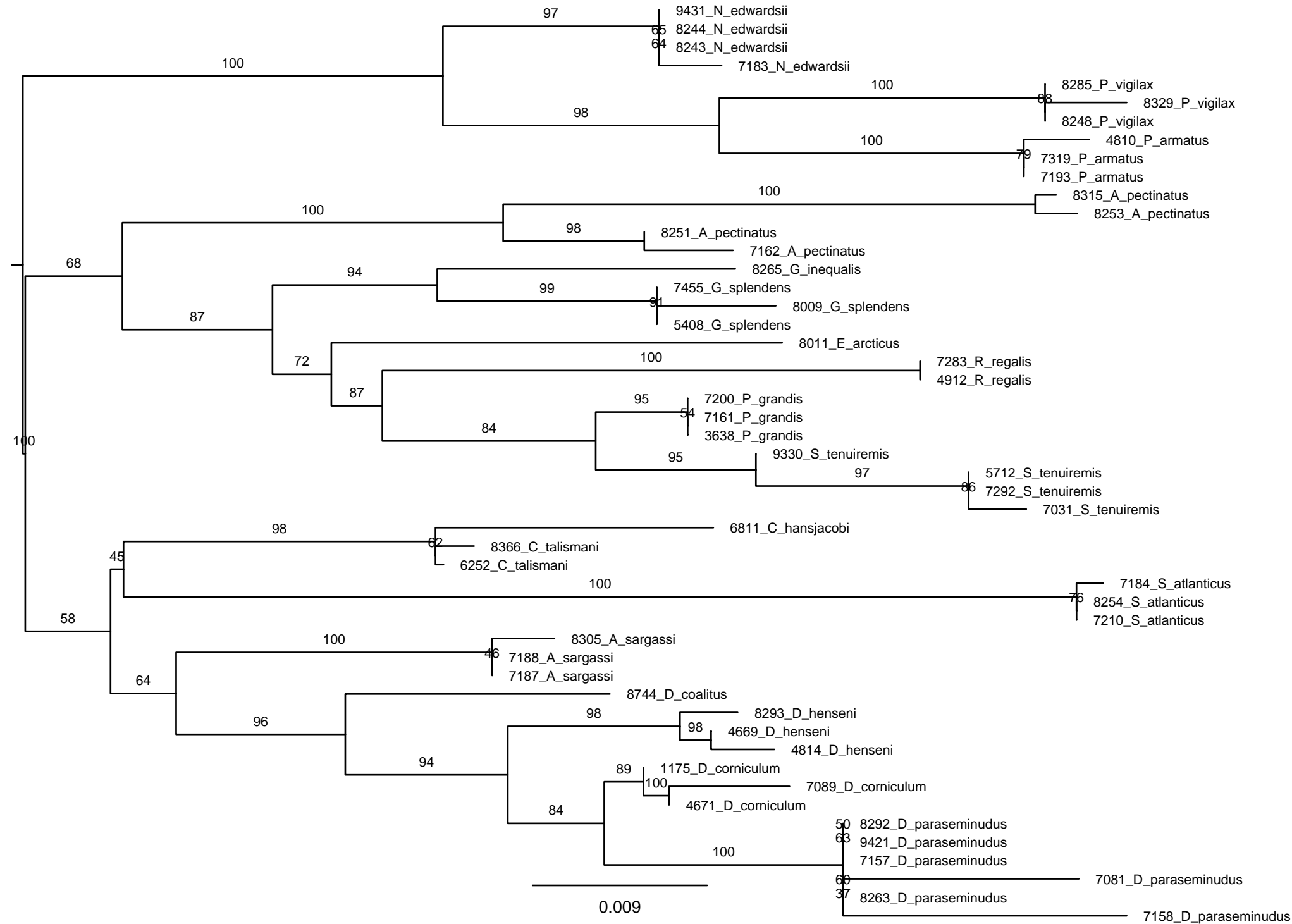


Fig. S13. Maximum likelihood phylogeny constructed from *NAK* gene sequences. Support values are represented by ultrafast bootstrapping after 1000 replicates.

Table S1. Each specimen used during genome skimming with their given voucher number, species name, seed sequence species name and the GenBank accession number for each seed sequence

Voucher number	Species	Seed species	Seed accession number
HBG 8267	<i>Lucensoergia lucens</i>	<i>Robustosergia robusta</i>	JQ305989.1
HBG 7031	<i>Sergia tenuiremis</i>	<i>Sergia tenuiremis</i>	HBG 3614
HBG 8513	<i>Prehensilosergia prehensilis</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 8509	<i>Acetes japonicus</i>	<i>Acetes japonicus</i>	KF977240.1
HBG 8409	<i>Robustosergia robusta</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 8365	<i>Challengerosergia talismani</i>	<i>Robustosergia robusta</i>	JQ305989.1
HBG 8315	<i>Neosergestes edwardsii</i>	<i>Deosergestes corniculum 16S</i>	MF197225.1
HBG 8292	<i>Deosergestes henseni</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 8270	<i>Sicyonella liui</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 8265	<i>Gardinerosergia inequalis</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 8264	<i>Prehensilosergia prehensilis</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 8262	<i>Deosergestes paraseminudus</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 8254	<i>Sergestes atlanticus</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 8251	<i>Allosergestes pectinatus</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 8248	<i>Parasergestes vigilax</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 8243	<i>Neosergestes edwardsii</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 8011	<i>Eusergestes arcticus</i>	<i>Sergestes arcticus</i>	JQ306307.1
HBG 7934	<i>Robustosergia robusta</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 7709	<i>Robustosergia robusta</i>	<i>Robustosergia robusta</i>	JQ305990.1
HBG 7455	<i>Gardinerosergia splendens</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 7319	<i>Parasergestes armatus</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 7283	<i>Robustosergia regalis</i>	<i>Robustosergia regalis</i>	MF197259.1
HBG 7200	<i>Phorcosergia grandis</i>	<i>Phorcosergia grandis</i>	HBG 4328 or HBG 3625
HBG 7188	<i>Allosergestes sargassi</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 7089	<i>Deosergestes corniculum</i>	<i>Deosergestes corniculum</i>	MF197258.1
HBG 6934	<i>Robustosergia robusta</i>	<i>Gardinerosergia splendens</i>	MF197260.1
HBG 6810	<i>Challengerosergia talismani</i>	<i>Robustosergia robusta</i>	JQ305989.1
HBG 6809	<i>Challengerosergia hansjacobi</i>	<i>Robustosergia robusta</i>	JQ305989.1

Table S2. Coding matrix used for ancestral state reconstruction of light organ evolution

0, no light organs; 1, organs of Pesta; 2, non-lensed photophores; 3, lensed photophores

Species	Character
<i>Acetes japonicus</i>	0
<i>Sicyonella liui</i>	0
<i>Deosergestes coalitus</i>	1
<i>Deosergestes henseni</i>	1
<i>Deosergestes corniculum</i>	1
<i>Deosergestes paraseminudus</i>	1
<i>Allosergestes sargassi</i>	1
<i>Allosergestes pectinatus</i>	1
<i>Allosergestes cf. pectinatus</i>	1
<i>Sergestes atlanticus</i>	1
<i>Neosergestes edwardsii</i>	1
<i>Parasergestes armatus</i>	1
<i>Parasergestes vigilax</i>	1
<i>Eusergestes arcticus</i>	1
<i>Gardinerosergia inequalis</i>	2
<i>Gardinerosergia splendens</i>	2
<i>Robustosergia regalis</i>	2
<i>Robustosergia robusta</i>	2
<i>Prehensilosergia prehensilis</i>	3
<i>Lucensosergia lucens</i>	3
<i>Challengerosergia hansjacobi</i>	3
<i>Challengerosergia talismani</i>	3
<i>Sergia tenuiremis</i>	0
<i>Phorcosergia grandis</i>	1

Table S3. Depth gradient data for each sergestid species, compiled from Foxtton (1972), Donaldson (1975), Walters (1976), Flock and Hopkins (1992), Cartes *et al.* (1994), and Vereshchaka (2000, 2009)

GOM, Gulf of Mexico

Species	Total depth range (m)	Day (m)	Night (m)	Habitat notes
<i>Gardinerosergia inequalis</i>	30–2000	1000–1300	100–300	
<i>Gardinerosergia splendens</i>	20–2000	700–1000	100–300	
<i>Robustosergia regalis</i>	100–2000	1000–1700	200–400	
<i>Robustosergia robusta</i>	200–2300	1000–2300	200–300	
<i>Prehensilosergia prehensilis</i>	30–1700	1000–1300	100–300	Bentho-bathypelagic
<i>Lucensosergia lucens</i>	20–700	700	20–30	Benthopelagic
<i>Challengerosergia hansjacobi</i>	30–1700	1700	300–400	Benthopelagic
<i>Challengerosergia talismani</i>	20–1200	700	30–200	Benthopelagic
<i>Sergia tenuiremis</i>	330–2000	1500–2000	500–2000	
<i>Phorcosergia grandis</i>	30–2300	800–1500	200–500	
<i>Deosergestes coalitus</i>	100–700	500–700	100–330	
<i>Deosergestes henseni</i>	100–700	500–700	100–200	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Deosergestes paraseminudus</i>	100–700	500–700	100–200	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Allosergestes sargassi</i>	50–900	400–900	50–400	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Allosergestes pectinatus</i>	0–700	400–700	0–250	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Sergestes atlanticus</i>	0–800	500–800	0–350	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Neosergestes edwardsii</i>	0–1000	400–100	0–270	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Parasergestes armatus</i>	50–830	500–830	50–300	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Parasergestes vigilax</i>	20–950	400–950	20–150	Very abundant species in the GOM. Some of the population does not migrate up every night
<i>Eusergestes arcticus</i>	30–1000	400–1000	30–1000	Benthopelagic

Table S4. Master table of every specimen used in this study, including their species name, HBG and other voucher identifications, location from where they were collected, and each gene recovered and used in our analyses with their given GenBank accession numbers

Entries marked with ‘–’ were attempted for sequencing but failed. Entries marked with ‘N/A’ were never attempted for sequencing

Species	Voucher Number (HBG)	Voucher number (alternate)	Locality	H3	NaK	16S	COX1	ATP6	12S	COB	COX2	COX3	NAD1	NAD2	NAD4	NAD5
Family Sergestidae Dana, 1852																
<i>Allosergestes</i> Judkins & Kensley, 2008																
<i>A. cf. pectinatus</i> (Sund, 1920)	7162		Florida Straits	MZ673724	MZ673774	MZ412610	–									
<i>A. cf. pectinatus</i> (Sund, 1920)	8251		Florida Straits	MZ673703	MZ673786	MT444426	MT447456	MZ404951	MZ412557	MZ571570	MZ404974	MZ404997	MZ571592	MZ895107	MZ723770	MZ571615
<i>A. pectinatus</i> (Sund, 1920)	8253		Florida Straits	MZ673702	MZ673785	MZ412594	MZ400731	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>A. pectinatus</i> (Sund, 1920)	8315		Florida Straits	MZ673690	MZ673764	MT444426	MT447455	MZ675564	MZ412549	MZ571563	MZ404966	MZ404989	MZ571584	MZ895100	MZ723762	MZ571607
<i>A. sargassi</i> (Ortmann, 1893)	7187		Florida Straits	MZ673720	MZ673772	–	MZ400747	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>A. sargassi</i> (Ortmann, 1893)	7188		Florida Straits	MZ673719	MZ673771	MT436762	MT444127	MZ404960	MZ412566	MZ571579	MZ404983	MZ405006	MZ571601	MZ895116	MZ723779	MZ571624
<i>A. sargassi</i> (Ortmann, 1893)	8305		Florida Straits	MZ673691	MZ673765	–	MZ400721	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Challengerosergia</i> Vereshchaka, Olesen & Lunina, 2014																
<i>C. hansjacobi</i> (Vereshchaka, 1994)	6809		Gulf of Mexico	MZ673734	–	MZ412618	MZ400759	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>C. hansjacobi</i> (Vereshchaka, 1994)	6811		Gulf of Mexico	MZ673732	MZ673754	MZ412616	MZ400757	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>C. hansjacobi</i> (Vereshchaka, 1994)	7173		Florida Straits	MZ673723	–	MZ412609	MZ400750	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>C. talismani</i> (Barnard, 1947)	6252		Florida Straits	MZ673735	MZ673755	MZ412619	MZ400760	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>C. talismani</i> (Barnard, 1947)	6810		Gulf of Mexico	MZ673733	–	MT436759	MT444889	MZ404963	MZ412569	MZ571582	MZ404986	MZ405009	MZ571604	MZ895119	MZ723781	MZ571627
<i>C. talismani</i> (Barnard, 1947)	7052		Gulf of Mexico	MZ673730	–	MZ412613	MZ400754	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>C. talismani</i> (Barnard, 1947)	8365		Hawaii	MZ673688	–	MZ412584	MZ400718	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>C. talismani</i> (Barnard, 1947)	8366		Hawaii	MZ673687	MZ673745	MZ412583	MZ400717	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Deosergestes</i> Judkins & Kensley, 2008																
<i>D. coalitus</i> (Burkenroad, 1940)	8744		Taiwan	MZ673679	MZ673779	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. corniculum</i> (Krøyer, 1855)	1175		Canary Islands	MZ673744	MZ673794	–	MZ400769	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. corniculum</i> (Krøyer, 1855)	4670		Gulf of Mexico	MZ673741	MZ673761	MZ412623	MZ400766	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. corniculum</i> (Krøyer, 1855)	4671		Gulf of Mexico	MZ673740	–	MZ412622	MZ400765	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. corniculum</i> (Krøyer, 1855)	7089		Gulf of Mexico	MZ673728	MZ673751	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. henseni</i> (Ortmann, 1893)	4669		Gulf of Mexico	MZ673742	MZ673762	–	MZ400767	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. henseni</i> (Ortmann, 1893)	4814		Gulf of Mexico	–	MZ673759	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. henseni</i> (Ortmann, 1893)	8293		Florida Straits	MZ673692	MZ673766	–	MZ400722	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	7157		Florida Straits	MZ673727	MZ673793	–	MZ400752	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	7158		Florida Straits	MZ673726	MZ673775	–	MZ400751	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	7081		Gulf of Mexico	MZ673729	MZ673752	MZ412612	MZ400753	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	9421		Canary Islands	MZ673674	MZ673763	–	MZ400707	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	8262		Mozambique	MZ673700	–	MZ412592	MZ400729	MZ404949	MZ412555	MZ571568	MZ404972	MZ404995	MZ571590	MZ895105	MZ723768	MZ571613
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	8292		Florida Straits	MZ673693	MZ673781	MT444423	MT445417	MZ404944	MZ412550	MZ571564	MZ404967	MZ404990	MZ571585	MZ895101	MZ723763	MZ571608
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	8263		Taiwan	MZ673699	MZ673783	MZ412591	MZ400728	MZ404948	MZ412554	MZ571567	MZ404971	MZ404994	MZ571589	MZ895104	MZ723767	MZ571612
<i>D. paraseminudus</i> (Crosnier & Forest, 1973)	8745		Taiwan	MZ673678	–	–	–	–	–	–	–	–	–	–	–	–
<i>Eusergestes</i> Judkins & Kensley, 2008																
<i>E. arcticus</i> (Krøyer, 1855)	8004		Atlantic Ocean	MZ673710	–	–	MZ400737	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>E. arcticus</i> (Krøyer, 1855)	8005		Atlantic Ocean	MZ673709	–	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>E. arcticus</i> (Krøyer, 1855)	8011		Atlantic Ocean	MZ673707	MZ673788	MZ412598	MZ400735	MZ404954	MZ412560	MZ571573	MZ404977	MZ405000	MZ571595	MZ895110	MZ723773	MZ571618

Species	Voucher Number (HBG)	Voucher number (alternate)	Locality	H3	NaK	I6S	COX1	ATP6	I2S	COB	COX2	COX3	NAD1	NAD2	NAD4	NAD5
<i>Gardinerosegia</i>																
Vereshchaka, Olesen & Lunina, 2014																
<i>G. inequalis</i> (Burkenroad, 1940)	8265		Taiwan	MZ673697	MZ673746	MZ412590	MZ400727	MZ404947	MZ412553	MZ675565	MZ404970	MZ404993	MZ571588	MZ895103	MZ723766	MZ571611
<i>G. inequalis</i> (Burkenroad, 1940)	8743		Taiwan	MZ673680	–	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>G. splendens</i> (Sund, 1920)	5408		Gulf of Mexico	MZ673737	MZ673757	MZ412620	MZ400762	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>G. splendens</i> (Sund, 1920)	7455		Florida Straits	MZ673712	MZ673789	MZ412601	MZ400739	MZ404956	MZ412562	MZ571575	MZ404979	MZ405002	MZ571597	MZ895112	MZ723775	MZ571620
<i>G. splendens</i> (Sund, 1920)	8009		Florida Straits	MZ673708	MZ673768	MT444421	MT444899	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Lucenosegia</i> Vereshchaka, Olesen & Lunina, 2014																
<i>L. lucens</i> (Hansen, 1922)	8267		Taiwan	MZ673696	–	MZ412589	MZ400726	MZ404946	MZ412552	MZ571566	MZ404969	MZ404992	MZ571587	MZ895102	MZ723765	MZ571610
<i>L. lucens</i> (Hansen, 1922)	8510		Japan	MZ673684	–	–	MZ400714	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>L. lucens</i> (Hansen, 1922)	8511		Taiwan	MZ673683	–	–	MZ400713	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Neosergestes</i> Judkins & Kensley, 2008																
<i>N. edwardsii</i> (Krøyer, 1855)	7183		Florida Straits	MZ673722	MZ673773	MZ412608	MZ400749	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>N. edwardsii</i> (Krøyer, 1855)	8243		Florida Straits	MZ673706	MZ673787	MH542882	MT447454	MZ404953	MZ412559	MZ571572	MZ404976	MZ404999	MZ571594	MZ895109	MZ723772	MZ571617
<i>N. edwardsii</i> (Krøyer, 1855)	9431		Florida Straits	MZ673673	MZ673777	MZ412579	MZ400706	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>N. edwardsii</i> (Krøyer, 1855)	8244		Florida Straits	MZ673705	MZ673747	–	–	–	–	–	–	–	–	–	–	–
<i>Parasergestes</i> Judkins & Kensley, 2008																
<i>P. armatus</i> (Krøyer, 1855)	4810		Gulf of Mexico	MZ673739	MZ673760	MZ412621	MZ400764	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. armatus</i> (Krøyer, 1855)	7193		Florida Straits	MZ673718	MZ673791	MZ412606	MZ400745	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. armatus</i> (Krøyer, 1855)	7319		Florida Straits	MZ673713	MZ673769	MT340804	MT444898	MZ404957	MZ412563	MZ571576	MZ404980	MZ405003	MZ571598	MZ895113	MZ723776	MZ571621
<i>P. vigilax</i> (Stimpson, 1860)	8248		Florida Straits	MZ673704	MZ673767	MT444420	MT447455	MZ404952	MZ412558	MZ571571	MZ404975	MZ404998	MZ571593	MZ895108	MZ723771	MZ571616
<i>P. vigilax</i> (Stimpson, 1860)	8285		Florida Straits	MZ673694	MZ673782	MZ412588	MZ400724	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. vigilax</i> (Stimpson, 1860)	8329		Florida Straits	MZ673689	MZ673780	MZ412585	MZ400719	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Phorosegia</i> Vereshchaka, Olesen & Lunina, 2014																
<i>P. grandis</i> (Sund, 1920)	3638		Gulf of Mexico	MZ673743	MZ673776	MZ412624	MZ400768	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	7161		Florida Straits	MZ673725	MZ673750	MZ412611	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	7200		Florida Straits	MZ673717	MZ673749	MT436763	MT444128	MZ404959	MZ412565	MZ571578	MZ404982	MZ405005	MZ571600	MZ895115	MZ723778	MZ571623
<i>P. grandis</i> (Sund, 1920)	10051		Canary Islands	MZ673667	–	MZ412577	MZ400703	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	10054		Canary Islands	MZ673666	–	MZ412576	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	10055		Canary Islands	MZ673665	–	MZ412575	MZ400702	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	10056		Canary Islands	MZ673664	–	MZ412574	MZ400701	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	10057		Canary Islands	MZ673663	–	MZ412573	MZ400700	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	10059		Canary Islands	MZ673662	–	MZ412572	MZ400699	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. grandis</i> (Sund, 1920)	10061		Canary Islands	MZ673661	–	MZ412571	MZ400698	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Prehensilosegia</i>																
Vereshchaka, Olesen & Lunina, 2014																
<i>P. prehensilis</i> (Spence Bate, 1881)	8264		Taiwan	MZ673698	–	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. prehensilis</i> (Spence Bate, 1881)	8512		Taiwan	MZ673682	–	–	MZ400712	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>P. prehensilis</i> (Spence Bate, 1881)	8513		Taiwan	MZ673681	–	–	MZ400711	MZ404942	–	–	MZ404964	MZ404987	–	MZ895099	–	MZ571605
<i>Robustosegia</i> Vereshchaka, Olesen & Lunina, 2014																
<i>R. regalis</i> (Gordon, 1939)	4912		Gulf of Mexico	MZ673738	MZ673758	–	MZ400763	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>R. regalis</i> (Gordon, 1939)	7283		Gulf of Mexico	MZ673715	MZ673770	MT436764	MT444900	MZ404958	MZ412564	MZ571577	MZ404981	MZ405004	MZ571599	MZ895114	MZ723777	MZ571622
<i>R. regalis</i> (Gordon, 1939)	9530		Gulf of Mexico	MZ673672	–	–	MZ400705	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>R. robusta</i> (Smith, 1882)	6934		Gulf of Mexico	–	–	MT436760	MT444890	MZ404962	MZ412568	MZ571581	MZ404985	MZ405008	MZ571603	MZ895118	MZ723780	MZ571626
<i>R. robusta</i> (Smith, 1882)	7934		Gulf of Mexico	MZ673711	–	MZ412600	MZ400738	MZ404955	MZ412561	MZ571574	MZ404978	MZ405001	MZ571596	MZ895111	MZ723774	MZ571619
<i>R. robusta</i> (Smith, 1882)	8409		Gulf of Mexico	MZ673686	–	–	MZ400716	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>R. robusta</i> (Smith, 1882)	9305		Gulf of Mexico	MZ673677	–	MZ412581	MZ400710	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>R. robusta</i> (Smith, 1882)	9306		Gulf of Mexico	MZ673676	–	MZ412580	MZ400709	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Sergestes</i> H. Milne Edwards, 1830																
<i>S. atlanticus</i> H. Milne Edwards, 1830	7184		Florida Straits	MZ673721	MZ673792	–	MZ400748	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. atlanticus</i> H. Milne Edwards, 1830	7210		Florida Straits	MZ673716	MZ673790	–	MZ400743	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. atlanticus</i> H. Milne Edwards, 1830	8254		Florida Straits	MZ673701	MZ673784	MT444422	MT447467	MZ404950	MZ412556	MZ571569	MZ404973	MZ404996	MZ571591	MZ895106	MZ723769	MZ571614

Species	Voucher Number (HBG)	Voucher number (alternate)	Locality	H3	NaK	I6S	COX1	ATP6	I2S	COB	COX2	COX3	NAD1	NAD2	NAD4	NAD5
Sergia Stimpson, 1860																
<i>S. tenuiremis</i> (Knøyer, 1855)	5712		Gulf of Mexico	MZ673736	MZ673756	–	MZ400761	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	7031		Gulf of Mexico	MZ673731	MZ673753	MT436761	MT444126	MZ404961	MZ412567	MZ571580	MZ404984	MZ405007	MZ571602	MZ895117	MZ723782	MZ571625
<i>S. tenuiremis</i> (Knøyer, 1855)	7292		Gulf of Mexico	MZ673714	MZ673748	MZ412603	MZ400741	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	9330		Gulf of Mexico	MZ673675	MZ673778	–	MZ400708	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	10062		Canary Islands	MZ673660	–	MZ412570	MZ400697	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	10049		Canary Islands	MZ673668	–	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	10047		Canary Islands	MZ673669	–	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	10046		Canary Islands	MZ673670	–	–	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>S. tenuiremis</i> (Knøyer, 1855)	10044		Canary Islands	MZ673671	–	MZ412578	MZ400704	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acetes H. Milne Edwards, 1830																
<i>A. japonicus</i> Kishinouye, 1905	8509		Taiwan	MZ673685	–	MZ412582	MZ400715	MZ404943	MZ412548	MZ571562	MZ404965	MZ404988	MZ571583	MZ723759	MZ723761	MZ571606
Sicyonella Borradaile, 1910																
<i>S. lui</i> T.Y. Chan, 2020	8270	MNHN IU-2010-4041	Madagascar	MZ673695	–	–	MZ400725	MZ404945	MZ412551	MZ571565	MZ404968	MZ404991	MZ571586	MZ723760	MZ723764	MZ571609

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