The dancing *Marsenia*:
The first record of a swimming velutinid mollusc

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Supplementary Materials

Table S1. Sequences used for molecular analysis (including voucher codes, sampling localities, and GenBank accession numbers).*new sequence.

Species	Voucher	Collection data	COI
Marsenia cf. *gemma*	MNHN-IM-2019-30080	New Caledonia, Bayu Is., Saint Hélène, on the slope, ABC Poum 2023/ABC78, 20°07'34.1"S 164°04'43.4"E; <1 m depth; 22/06/2023	OR933637*
Marsenia cf. *gemma*	MNHN-IM-2013-3209	Papua New Guinea, west of Sek Is., PAPUA NIUGINI/PD28, 05°04.8' S, 145°50.7' E, 1–4 m depth	ON524306
Marsenia cf. *gemma*	MNHN-IM-2019-8253	New Caledonia, KOUMAC 2.3/KD546, 20°41' S, 164°17.1' E, 6 m depth	ON524307
Marsenia cf. *gemma*	MNHN-IM-2013-5160	Papua New Guinea, south of Panab Is., PAPUA NIUGINI/PD53, 05°10.3' S, 145°48.5' E, 2–10 m depth	ON524308
Marsenia cf. *gemma*	MNHN-IM-2019-9052	New Caledonia, Kendec Is., KOUMAC 2.3/KM724, 20°40.1' S, 164°15.4' E, 0 m depth	ON524309
Marsenia cf. *gemma*	MNHN-IM-2019-3139	New Caledonia, KOUMAC 2.3/KD505, 20°34.3' S, 164°15.2' E, 2–4 m depth	ON524310
Marsenia cf. *gemma*	MNHN-IM-2009-16139	Madagascar, Phare Flacourt, ATIMO VATAE/TB13, 25°01.5' S, 47°00.0' E, 2 m depth	MK047754
Marsenia cf. *gemma*	MNHN-IM-2009-16130	Madagascar, off Monseigneur Bay, ATIMO VATAE/TB05, 25°02.2' S, 47°00.4' E, 23 m depth	MK047755
Marsenia cf. *gemma*	IOP-039	Saudi Arabia, Read Sea, ARMS, 22.18 N , 38.57 E, 10 m depth	MH339301
Marsenia cf. *gemma*	MNHN-IM-2009-16141	Madagascar, Lavanono sector, ATIMO VATAE/BB03, 25°26.4' S, 44°56.1' E, 14 m depth	MK047756
Marsenia herberti	IOP-0560	Saudi Arabia, Read Sea, ARMS, 22.18 N , 38.57 E, 10 m depth	MH339352
Marsenia herberti	BJLinnSoc-4	Tanzania, Dar es Salaam	AY161616
Marsenia herberti	UF IZ 508461	USA, Hawaii, Oahu, Kaneohe Bay, north of Kapapa Is., 21° 30.094' N, 157° 47.786' W	MW278536
Marsenia herberti	MNHN-IM-2013-79992	Philippines, Panglao, Panglao 2004/B22 BC1176/SC119, 09°29,4'N 123°56' E, 15-20 m depth	MK047752
Marsenia herberti	MNHN-IM-2019-8219	New Caledonia, Grand Récif of Koumac, KOUMAC 2.1/KA11/ARMS 11A, 20°40.1' S, 164°11.4' E, 19 m depth	ON524324

Lamellaria diegoensis	LACM 182857	USA, Oregon, Gold Beach, Four Sisters Rock, 42° 35.564' N, 124° 24.106' W	ON524249
Lamellaria fella	BAU 2845	Martinique, Anse Noire	ON524253
Lamellaria mopsicolor	MNHN-IM-2013-73086	Martinique, Fort-de-France Bay, Marettes Cove, MADIBENTHOS/AR471, 14°33' N, 61°03.7' W, 1–4 m depth	ON524256

Table S2. Pairwise COI genetic distances (%) between velutinid specimens, calculated with MEGA11 (K2P, pairwise deletion).

	MNHN_IM_2019_30080	MNHN_IM_2013_3209	MNHN_IM_2009_16130	MNHN_IM_2009_16139	MNHN_IM_2019_9052	MNHN_IM_2019_3139	MNHN_IM_2019_8253	MNHN_IM_2009_16141	IOP_039	MNHN_IM_2013_5160	IOP_0560	BJLinnSoc_4	UF_IZ_508461	MNHN_IM_2013_79992	MNHN_IM_2019_8219	MNHN_IM_2013_73086	BAU_2845	LACM_182857
MNHN_IM_2019_30080_NC_Marsenia	0																	
MNHN_IM_2013_3209_PG_Marsenia_cf_gemma	0.66	0																
MNHN_IM_2009_16130_MG_Marsenia_cf_gemma	0.82	0.83	0															
MNHN_IM_2009_16139_MG_Marsenia_cf_gemma	0.99	1	0.16	0														
MNHN_IM_2019_9052_NC_Marsenia_cf_gemma	0.82	0.83	0.66	0.82	0													
MNHN_IM_2019_3139_NC_Marsenia_cf_gemma	0.66	0.66	0.16	0.33	0.49	0												
MNHN_IM_2019_8253_NC_Marsenia_cf_gemma	0.99	1	0.49	0.66	0.82	0.33	0											
MNHN_IM_2009_16141_MG_Marsenia_cf_gemma	0.49	0.83	0.33	0.49	0.66	0.16	0.49	0										
IOP_039_Mollusca_SA_RedSea_Marsenia_cf_gemma	0.49	0.83	0.33	0.49	0.66	0.16	0.49	0	0									
MNHN_IM_2013_5160_PG_Marsenia_cf_gemma	0.66	0.66	0.49	0.66	0.49	0.33	0.66	0.49	0.49	0								
IOP_0560_SA_RedSea_Marsenia_herberti	8.91	8.2	8.53	8.34	9.29	8.72	8.72	8.72	8.72	9.1	0							
BJLinnSoc_4_TZ_ZNZ_Marsenia_herberti	9.66	8.95	9.66	9.47	9.66	9.47	9.47	9.47	9.47	9.85	3.36	0						
UF_IZ_508461_US_HI_Marsenia_herberti	9.1	8.4	8.72	8.54	9.49	8.91	8.91	8.91	8.91	9.3	2.51	2.85	0					
MNHN_IM_2013_79992_PH_Marsenia_herberti	9.49	8.78	9.1	8.91	9.87	9.3	9.3	9.3	9.3	9.68	2.51	3.2	0.66	0				
MNHN_IM_2019_8219_NC_Marsenia_herberti	9.3	8.59	8.91	8.72	9.68	9.1	9.1	9.1	9.1	9.49	2.34	3.02	0.49	0.16	0			
MNHN_IM_2013_73086_MQ_Lamellaria_mopsicolor	16.2	16.5	16.2	16.41	16.41	16.41	16.41	16.41	16.41	16.82	17.68	18.53	17.48	18.12	17.9	0		
BAU_2845_MQ_Lamellaria_fella	18.91	19.47	19.35	19.13	19.13	19.57	19.13	19.57	19.57	19.57	20.91	20.9	19.81	20.7	20.48	10.47	0	
LACM_182857_US_OR_Lamellaria_diegoensis	17.86	17.55	17.44	17.23	18.08	17.65	17.23	17.65	17.65	18.08	18.09	17.86	18.1	18.75	18.53	14.08	14.53	0
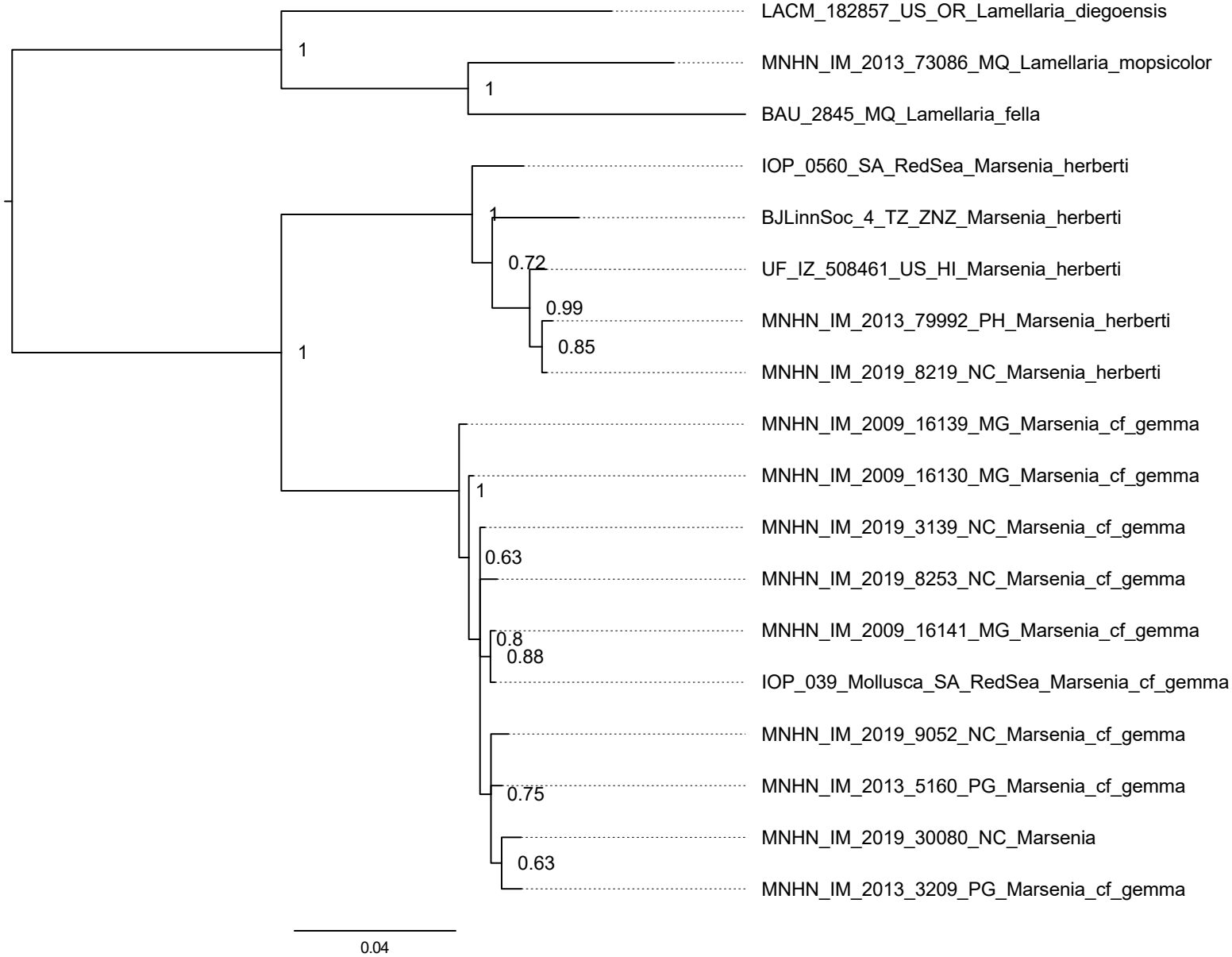
Figure S1. Bayesian Inference tree of the COI velutinid dataset, at node posterior probability values (considered supported when >0.95)