

Reconstructing the Biogeographic History of the Genus *Aurelia* Lamarck, 1816 (Cnidaria, Scyphozoa), and Reassessing the Nonindigenous Status of *A. solida* and *A. coerulea* in the Mediterranean Sea

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Supplementary materials:

Table S1. Estimates of evolutionary divergence between sequences. The number of hundred base substitutions per site from between sequences are shown. 28S: above diagonal. COI: below diagonal.

Ind	I00	I01	I02	I03	I04	I05	I06	I07	I08	I37	I40	I83	I84	I88	I89	I90	I91	I92	I93	I94	I95	I96	I117	I118	I119
I00		0.128	0.000	0.000	0.128	0.128	0.000	0.000	0.000	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I01	NA		0.128	0.128	0.255	0.000	0.128	0.128	0.128	0.000	0.128	0.128	0.128	0.128	0.128	0.128	0.255	0.000	0.000	0.128	0.128	0.128	0.128	0.128	0.128
I02	NA	1.333		0.000	0.128	0.128	0.000	0.000	0.000	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I03	NA	NA	0.188		0.128	0.128	0.000	0.000	0.000	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I04	NA	1.141	1.721	NA		0.255	0.128	0.128	0.128	0.255	0.128	0.128	0.128	0.128	0.128	0.128	0.255	0.255	0.255	0.128	0.128	0.128	0.128	0.128	0.128
I05	NA	1.141	1.721	NA	1.527		0.128	0.128	0.128	0.000	0.128	0.128	0.128	0.128	0.128	0.128	0.255	0.000	0.000	0.128	0.128	0.128	0.128	0.128	0.128
I06	NA	1.141	1.916	NA	1.527	1.141		0.000	0.000	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I07	NA	1.721	NA	NA	1.721	1.333	1.721		0.000	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I08	NA	NA	1.721	NA	NA	NA	NA	NA		0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I37	NA	1.527	1.333	NA	1.527	1.527	1.527	0.188	NA		0.128	0.128	0.128	0.128	0.128	0.128	0.255	0.000	0.000	0.128	0.128	0.128	0.128	0.128	0.128
I40	NA	1.141	1.721	NA	1.141	1.141	1.141	0.567	NA	0.377		0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I83	NA	1.527	1.721	NA	1.527	1.141	1.527	0.188	NA	0.377	0.377		0.000	0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I84	NA	1.141	1.141	NA	1.527	0.377	1.141	0.949	NA	1.141	0.758	0.758		0.000	0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I88	NA	0.567	0.949	NA	0.949	0.567	0.567	1.141	NA	0.949	0.567	0.949	0.567		0.000	0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I89	NA	0.758	0.567	NA	0.758	0.758	0.758	0.949	NA	0.758	0.377	0.758	0.758	0.188		0.000	0.128	0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I90	NA	1.527	1.916	NA	0.377	1.916	1.916	2.112	NA	1.916	1.527	1.916	1.916	1.333	1.141	0.128		0.128	0.128	0.000	0.000	0.000	0.000	0.000	0.000
I91	NA	1.333	1.916	NA	1.721	0.567	1.333	1.916	NA	2.112	1.721	1.721	0.949	1.141	1.333	2.112	0.255		0.255	0.128	0.128	0.128	0.128	0.128	0.128
I92	NA	1.333	0.567	NA	1.721	0.567	1.333	1.916	NA	2.112	1.721	1.721	0.949	1.141	1.333	2.112	0.000	0.000		0.128	0.128	0.128	0.128	0.128	0.128
I93	NA	1.527	0.188	NA	0.377	1.916	1.916	2.112	NA	1.916	1.527	1.916	1.916	1.333	1.141	0.000	2.112	2.112	0.128		0.128	0.128	0.128	0.128	0.128
I94	NA	1.141	1.916	NA	0.000	1.527	1.527	1.721	NA	1.527	1.141	1.527	1.527	0.949	0.758	0.377	1.721	1.721	0.377	0.000		0.000	0.000	0.000	0.000
I95	NA	1.333	1.916	NA	1.721	0.567	1.333	1.916	NA	2.112	1.721	1.721	0.949	1.141	1.333	2.112	0.000	0.000	2.112	1.721	0.000		0.000	0.000	0.000
I96	NA	1.333	NA	NA	1.721	0.567	1.333	1.916	NA	2.112	1.721	1.721	0.949	1.141	1.333	2.112	0.000	0.000	2.112	1.721	0.000	0.000		0.000	0.000
I117	NA	NA	1.916	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000		0.000
I118	NA	1.721	0.567	NA	1.721	1.333	1.721	0.000	NA	0.188	0.567	0.188	0.949	1.141	0.949	2.112	1.916	1.916	2.112	1.721	1.916	1.916	NA		0.000
I119	NA	1.141		NA	0.377	1.141		1.333	NA	1.141	0.758	1.141	1.141	0.567	0.377	0.758	1.721	1.721	0.758	0.377	1.721	1.721	NA	1.333	

Table S2. Coordinates where the genetically identified individuals of the genus *Aurelia* have been collected.

Species	Latitude	Longitude
<i>Aurelia aurita</i>	53.5	-4.6666
	58.323	19.969
	44.9402	-67.0025
	50.8175	-1.4453
	60.188	5.538
	62.9	6.833
	43.409464	34.294299
	60.263	5.226128
	51.7317	3.9729
	48.5677	-53.9567
	40.992395	29.000979
	41	29
	42.3573	-71.0441
	51.3958	3.5704
	51.6755	3.7553
	42.878993	51.022505
	41.3801	-71.6458
	58.7	-94.2
	52.9616	4.7804
	51.7434	3.8796
	53.4448	6.8246
	54.5582	11.1555
	54.5944	18.6463
	44.5719	38.0511
	41.657739	-71.445434
	58.2499	11.4465
	58.2666	11.4333
	54.18	7.898
	51.7761	3.9464
	54.744	8.273
	50.8321	-1.0829
	53.7975	-4.4848
	51.5923	3.719
	57.649	11.752
	54.423	10.2113
	63.94505	-52.932967
	55.085	-59.171
	-33.03465	-71.617981
	53.0056	4.7964
	40.7283	161.9282
	56.415	-5.479
	54.4712	2.644
	59.042	-2.751

Table S2. (continued).

	-48.3495	-74.1949
	53.0718	3.2326
	56.347	-2.784
	47.7477	-64.7084
	41.8047	35.415
	50.873	-1.381
	50.8429	-1.329
	45.0714	-67.0546
	45.1019	-67.0528
	54.9075	8.4222
	53.3651	5.2216
	41.0055	39.7494
	54.5035	2.8293
	55.037	1.7027
	54.8108	1.6898
	54.7952	2.1482
	52.4713	3.7827
	-54.8778	-68.2381
	52.7662	4.2128
	53.2969	5.089
	65.863	39.741
<i>Aurelia ayla</i>	12.2	-68.308611
<i>Aurelia cebimarensis</i>	-25.068	-47.898
	-10.9918	-37.0445
<i>Aurelia clausa</i>	7.338133	134.467431
	2.883	131.721
	0.499	130.571222
	-5.4178	150.701357
	7.3	134.4666
<i>Aurelia coerulea</i>	-43.2	147
	-36.0164	150.1175
	-34.5166	150.8333
	-34.0711	151.1247
	-33.8698	151.1999
	-33.8547	151.2032
	-33.8464	151.249
	-33.3109	151.491
	-33.0975	151.5799
	-32.0132	115.7301
	-26.6839	153.1338
	24.47	118.223
	31.36	130.68
	32.7178	-117.184
	33.221	132.5553

Table S2. (continued).

	33.602	-117.926
	33.6118	-117.922
	33.6241	-117.893
	33.68	135.32
	33.7549	-118.15
	33.9662	118.4514
	34.125	132.552
	34.2003	132.5387
	34.5323	18.0538
	34.722	127.661
	34.9925	128.6752
	35.11	142.92
	35.1225	-139.816
	35.211	139.405
	35.2161	129.228
	35.409	119.562
	35.4905	135.3688
	35.542	135.194
	36.112	120.322
	36.1544	120.3305
	36.918	122.41
	36.923333	122.511667
	37.221	119.182
	37.466	126.578
	37.536	121.424
	38.766	121.5
	38.9333	139.8
	38.9382	121.748
	39.106	118.506
	40.757832	29.905311
	41.2699	13.0341
	41.8822	15.7399
	42.2466	3.1351
	42.49	144.17
	48.728	-3.983
	54.126825	8.835968
<i>Aurelia cf. coerulea</i>	11.5129	79.778
<i>Aurelia colpota</i>	No data	No data
<i>Aurelia columbia</i>	51.401	-130.248
	48.768736	-123.451825
	48.369	-123.718
	48.65	-123.4833
	48.5453	-123.012
	47.79865	-122.8664
	48.544899	-123.003267

Table S2. (continued).

<i>Aurelia dubia</i>	25.216	55.068
	21.36	48.09
<i>Aurelia cf. dubia</i>	29.512	34.947
<i>Aurelia hyalina</i>	58.8014	-93.8195
	58.8377	-4.2376
	63.933967	-52.920533
	63.94505	-52.932967
	72.315	175.984
	65.578	168.348333
	59.633	-151.45
<i>Aurelia insularia</i>	-23.098	-44.278
	-23.805	-45.391
	-27.2787	-48.3789
	-27.2846	-48.3756
	-27.1686	-48.401
	25.081139	-80.450917
<i>Aurelia labiata</i>	60.53622	-145.825434
	44.6351	-124.0682
	38.2344	-122.9802
	47.5	-125.07
	48.83076	-125.138254
	48.424931	-123.3857
	36.860135	-121.935804
<i>Aurelia limbata</i>	39.081961	141.824288
	43.259	141.204
	37.014	129.965
	59.527309	-152.255
<i>Aurelia malayensis</i>	9.645533	118.785398
	26.39	127.9
	7.2572	134.3825
	7.149	134.353
	7.15	134.3833
	7.3166	134.5166
	21.2852	-157.8411
	2.1	118.33
	-0.454817	130.493
	2.150333	118.514167
<i>Aurelia madivensis</i>	No data	No data
<i>Aurelia marginalis</i>	18.362153	-93.59701
	30.1577	-88.1394
	24.7808	-80.6866
	30	-88
	29.464658	-94.772327
<i>Aurelia mianzani</i>	-35.93555	-56.985622
	-40.142	-59.069

Table S2. (continued).

	-23.827138	-45.422071
<i>Aurelia misteriosa</i>	37.694429	-25.3251
<i>Aurelia miyakei</i>	13.280556	100.913333
<i>Aurelia montyi</i>	30.1577	-88.1394
	24.7808	-80.6866
<i>Aurelia mozambica</i>	-13.710756	40.595888
<i>Aurelia persea</i>	32.8777778	34.975
<i>Aurelia pseudosolida</i>	45.08484	13.634036
<i>Aurelia cf. pseudosolida</i>	37.694429	-25.4251
	38.541653	-28.759464
<i>Aurelia rara</i>	30.1577	-88.1394
<i>Aurelia relict</i>	42.723	17.501
	42.7713	17.3627
	42.781231	17.347346
<i>Aurelia smithsoniana</i>	9.22349	-82.21989
<i>Aurelia solida</i>	45.641	13.728
	40.258	17.889
	37.298	9.939
	37.187	9.858
	45.53	13.556
	45.547	13.722
	29.512	34.947
	20.15	38.592
	44	14
	42.8327	17.6986
	45.5143	13.5742
	37.724501	-0.788332
<i>Aurelia vitiana</i>	No data	No data
<i>Aurelia</i> sp. 3	7.3384	134.4648
	7.25	134.45
	7.1518	134.3565
	7.305	134.477
<i>Aurelia</i> sp. 7	-41.283	174.783
	-43.2	147
	-41.1645	173.8637
	-46.9834	168.1202
<i>Aurelia</i> sp. 12	24.173437	-110.315781
<i>Aurelia</i> sp. 13	10.95636	-85.72839
	12.052363	-86.706099
	13.13522	-88.1968
<i>Aurelia</i> sp. 14	8.985814	-79.492375
<i>Aurelia</i> sp. 17	8.862	98.259
<i>Aurelia</i> sp. 18	28	-89.068889



Figure S1. Evolutionary history, as inferred by Maximum Likelihood, of the genus *Aurelia* in the Mediterranean Sea. a) Phylogenetic tree for the 28S genetic marker. b) Phylogenetic tree for the COI genetic marker. Numbers above the tree branches indicate bootstrap support for each branch.

