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Spatio-temporal variation of the invasive copepod *Oithona davisae* in the zooplankton community of Kavala harbour

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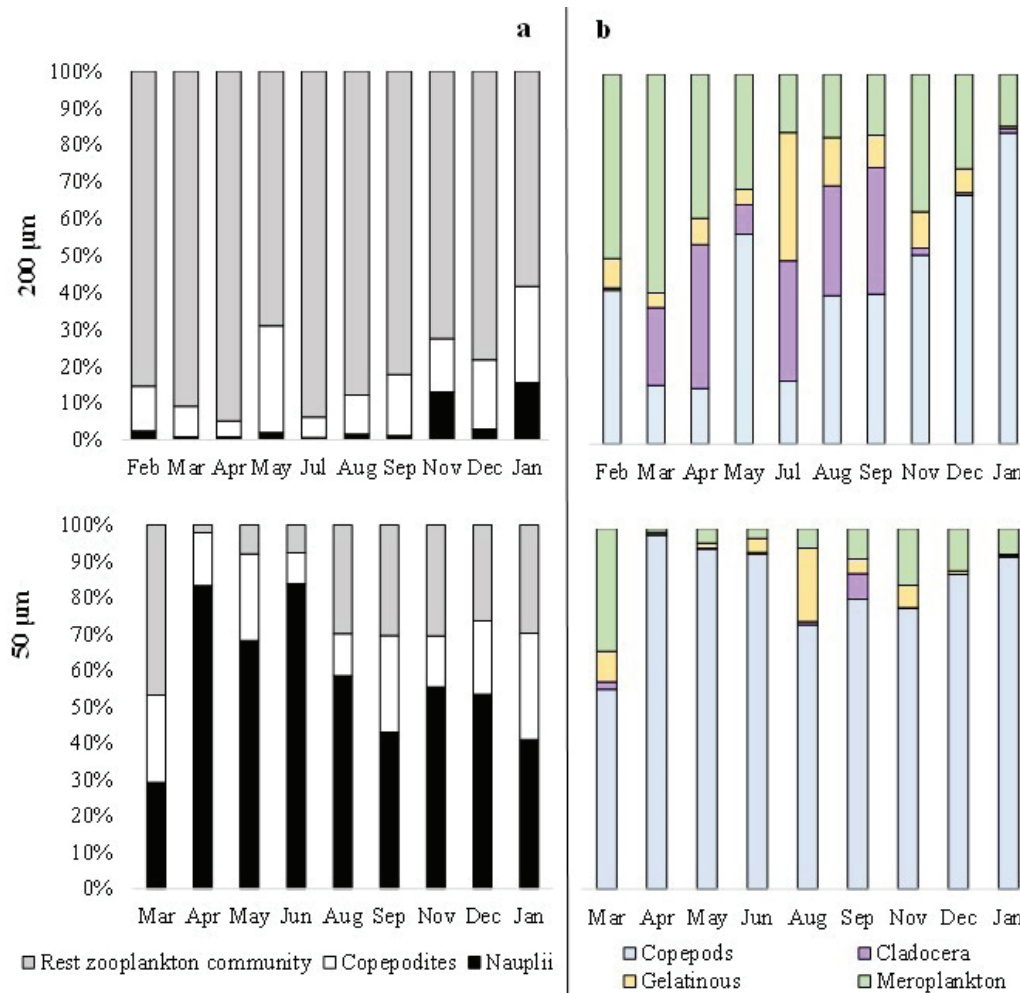


Fig. S1: Contribution (%) of the main groups to the 200 µm and 50 µm net abundance in the Kavala harbour during 2017-2018. a) Contribution (%) of nauplii and copepodites on the rest zooplankton community. b) Contribution (%) of dominant mesozooplankton groups to total abundance.

Table S1. List of recorded taxa in Kavala harbour. Mean abundance values (individuals m⁻³) of all samplings per station. Adults include males and females.

	ST.1		ST.2		ST.3		ST.4		ST.5	
	250µm	50µm	50µm	50µm	250µm	50µm	250µm	50µm	250µm	50µm
Holoplankton										
Copepoda										
Nauplii	66.34	5983.15	100.59	7372.35	88.7	5862.26	31.12	5849.11	38.99	6883.73
Calanoida										
Copepodites of Calanoida	189.22	922.63	154.21	543.07	245.44	654.69	365.22	452.01	426.61	770.33
<i>Acartiura (Acartiura) clausi</i> Giesbrecht, 1889	80.59	10.75	61.83	0.75	24.13	28.72	16.02	1.27	167.27	0
<i>Aetideus armatus</i> (Boeck, 1872)	0	0	0	0	0	0	0	0	0	1.13
Calanoida spp.	0	0	0	0	0.53	0	4.66	0.63	0	0
<i>Calocalanus pavo</i> (Dana, 1852)	1.1	1.41	1.4	0	0	0	0.12	0	0.35	0
<i>Centropages</i> spp. Krøyer, 1849	110.56	31.81	64.17	12.33	11.36	2.85	30.5	17.69	39.43	3.39
<i>Clausocalanus</i> spp. Giesbrecht, 1888	0	15.53	0	9.74	60.99	28.54	19.02	3.82	0	0.56
<i>Isias clavipes</i> Boeck, 1865	0	0	0	0.45	0	0	0	0	0	0.56
<i>Mecynocera clausi</i> Thompson I.C., 1888	3.31	5.63	1.89	0.9	4.69	2.31	6.47	0	1.67	0.56
<i>Paracalanus parvus</i> species complex (Claus, 1863)	232.51	56.46	172.82	13.34	46	23.87	52.04	49.32	326.63	14.72
<i>Paracartia grani</i> Sars G.O., 1904	27.12	12.73	24.3	8.92	29.87	33.97	75.86	8.76	71.91	8.49
<i>Temora stylifera</i> (Dana, 1849)	15.88	0.28	27.97	9.5	8.26	4.8	3.15	1.14	4.18	6.11
<i>Pontella</i> sp. Dana, 1846	1.18	0	0.41	0	0	0	0	0	0.22	0
Cyclopoida										
Copepodites of Cyclopoida	0.3	840	0.51	866.3	36.92	1036.49	9.58	857.09	1.91	836.91
<i>Corycaeus</i> spp. Dana, 1845	2.51	8.74	3.18	3	5.98	5.16	3.89	2.83	0.7	3.28
<i>Farranula rostrata</i> (Claus, 1863)	7.73	0	8	0	0	0	0	0	2.94	0
<i>Oithona</i> spp. (<i>O. decipiens</i> , <i>O. parvula</i> , <i>O. plumifera</i> , <i>O. similis</i> , <i>O. tenuis</i>)	26.81	0	52.04	1.31	10.22	0	10.37	0	13.46	0
<i>Oithona davisae</i> (Ferrari F.D. & Orsi, 1984)	65.7		41.83		66.5		188.05		323.05	
<i>Oithona nana</i> Giesbrecht, 1893		238.42		134.52		161.66		134.42		143.46
<i>Oithona (davisae, nana)</i>	12.63		16.6		26.99		28.17		19.92	
<i>Oncaea</i> sp. Philippi, 1843 & <i>Triconia</i> sp. Böttger-Schnack, 1999	9.89	18.4	14.78	19.54	14.3	29.45	0.22	3.34	0.8	6.56
Harpacticoida										
Copepodites of Harpacticoida	0.62	85.9	1.13	74.17	6.5	94.14	1.65	59.16	0	66.58

Continued

Table S1 continued

	ST.1		ST.2		ST.3		ST.4		ST.5		
	250µm	50µm	50µm	250µm	250µm	50µm	50µm	250µm	50µm	250µm	50µm
<i>Clytemnestra rostrata</i> (Brady, 1883)	2.5	0	1.12	0.377	0.12	0	0	0	1.41	0	0
<i>Clytemnestra scutellata</i> Dana, 1847	0.29	0	0.56	0	0	0	0	0	0	0	0
<i>Euterpina acutifrons</i> (Dana, 1847)	21.4	51.96	16.26	6.54	6.01	12.96	8.17	4.04	14.62	8.9	0
<i>Harpacticus</i> spp. Milne Edwards H., 1840	0	0.39	0	1.2	1.65	2.06	0.22	0	0	0	0
<i>Microsetella</i> spp. Brady & Robertson, 1873	0	19.47	0.7	43.63	0.72	30.58	0.12	23.19	0.7	4.41	0
<i>Harpacticoida</i> spp. Sars G.O., 1903	0	0.56	0	8.07	12.04	7.13	6.66	3.62	0	6.34	0
<i>Zaus</i> sp. Goodsir, 1845	0	0	0	0	0	0.36	0	1.74	0	0	0
Monstrilloidea											
<i>Cymbasoma</i> sp. Thompson I.C., 1888	0	0	0.09	0	1.06	0	0.6	0	1.88	0	0
<i>Monstrilla</i> sp. Dana, 1849	0	1.38	0	1.66	0	0	0.37	0	0	0	0
Total copepoda	812.49	8371.3	724.56	9173.497	642.48	8088.5	674.2	7661.23	1135.6	9089.07	
Cladocera											
<i>Evadne norðmanni</i> Lovén, 1836	265.37	0	219.03	3.74	1.1	0	13.1	0	30.21	0	0
<i>Evadne spinifera</i> P.E. Müller, 1867 & <i>Pseudevadne tergestina</i> (Claus, 1877)	7.433	79.48	36.3	13.01	116.33	28.67	158.64	109.99	0.7	8.49	0
<i>Penilia avirostris</i> Dana, 1849	309.7	137.61	599.17	76.26	399.79	261.14	78.63	35.3	47.95	35.1	0
<i>Pleopsis polyphemoides</i> (Leuckart, 1859) & <i>Podon intermedius</i> Lilljeborg, 1853	17.89	10.81	8.62	8.02	73.72	23.71	135.5	24.38	3.86	10.75	0
Total Cladocera	600.39	227.9	863.12	101.03	590.94	313.52	385.87	169.67	82.72	54.34	
Gelatinous											
Appendicularia	126.39	374.79	202	449.98	51.96	534.52	87.19	493.85	100.15	434.81	0
Chaetognatha	4.14	9.78	4.16	0.37	1.86	2.11	0.74	0	3.86	0	0
Cnidaria	63.2	81.57	36.24	71.78	25.33	88.87	41.55	32.5	30.48	52.54	0
<i>Synchaeta</i> spp. Ehrenberg, 1832	0	1103	0	917.01	0	907.34	0	487.2	0	315.92	0
Thaliacea	37.53	18.4	48.21	3.62	34.75	8.49	14.13	0	10.61	8.49	0
Total Gelatinous	231.26	1587.54	290.61	1442.76	113.9	1541.33	143.61	1013.55	145.1	811.76	
Rotifera											
<i>Keratella</i> spp. Bory de St. Vincent, 1822	0	1.81	0	4.17	0	1.07	0	10.04	0	3.28	0

Continued

	ST.1		ST.2		ST.3		ST.4		ST.5		
	250µm	50µm	50µm	250µm	50µm	250µm	50µm	250µm	50µm	250µm	
Meroplankton											
Amphipoda	0.57	0	0	1.6	0	1.84	0	0.98	0	1	0
Asciacea	4.25	7.22	5.44	5.44	5.2	5.71	2.1	8.47	21.36	11.05	9.62
Bivalvia	31.68	139.32	34.15	34.15	202.19	158.9	173.81	114.6	151.1	32.11	280.25
Bryozoa	5.27	12.26	3.58	3.58	13.55	73.89	19.81	191.29	42.22	0.7	13.02
Cirripedia	143.58	126.64	132.12	132.12	88.58	107.72	125.57	186.2	138.38	161.82	289.31
Decapoda	8.24	1.41	5.18	5.18	0.75	1.1	0	0.27	2.83	0.28	0
Echinodermata	6.62	20.95	12.76	12.76	6.64	16.24	19.57	4.99	8.49	0.58	2.83
Euphausiacea	0	0	0	0	0	0.53	0	0.12	0	0	0
Gastropoda	8.79	9.86	24.61	24.61	5.22	14.16	0	3.94	2.83	9.2	0.56
Isopoda	0	0	0	0	0.75	1.1	2.63	0.12	0	0	0.56
Mysidacea						1.68		0.1			
Ostracoda	0	0	0	0	0.377	0	1.09	0	0.5	0	0
Polychaeta	0	450.45	256.1	256.1	521.33	116.74	294.71	301.94	419.35	142.91	345.02
Polyplacophora	0	0	0	0	0	0.63	2.31	0.24	0	0	0
Phoronida	0.39	0.28	0.18	0.18	0	0	0	0	0	0.35	0
Nematoda	0	5.64	0	0	20.5	0.53	6.67	0.63	5.01	0	6.79
Total Meroplankton	209.39	774.03	475.72	475.72	865.087	500.77	648.27	813.89	792.07	360	947.96

Table S2. Results of ANOSIM and SIMPER analysis applied on Bray-Curtis similarity matrix of log(x+1) transformed copepods abundance data, collected with 50 µm plankton net.

Groups	ANOSIM		SIMPER										
	R	Significance level %	Average dissimilarity	Most contributing to dissimilarity taxa	Average Abundance	Average Abundance	Average Dissimilarity ± Standard Deviation (SD)	Contribution % (up to 50%)					
b & c	0.8	0.1	42.48	Group b	Group c								
									<i>Oithona davisae</i>	1.31	4.88	4.15 ± 1.176	9.78
									<i>Paracalanus parvus</i> species complex	0.18	3.82	3.97 ± 2.5	9.36
									Calanoida copepodites	4.05	7.12	3.33 ± 2.16	7.85
									<i>Microsetella</i> spp.	0.66	3.15	3.02 ± 1.57	7.11
									<i>Paracartia grani</i>	0.00	2.61	2.70 ± 1.35	6.35
									<i>Oithona nana</i>	3.31	5.71	2.65 ± 1.46	6.23
										Group b	Group a		
										6.02	0.00	10.24 ± 5.14	16.02
									b & a	1	3.7	69.93	Group b
Cyclopoida copepodites	7.45	3.28	7.09 ± 2.99	11.09									
Nauplii	0.06	3.45	5.82 ± 6.35	9.1									
<i>Clausocalanus</i> sp.	0.37	3.73	5.73 ± 3.67	8.96									
<i>Centropages</i> spp.	Group c	Group a											
	6.89	0.00	7.54 ± 9.5	12.73									
	8.88	3.28	6.11 ± 4.73	10.33									
	4.87	0.00	5.38 ± 7.31	9.08									
	4.88	0.00	5.36 ± 2.57	9.05									
	5.71	1.81	4.27 ± 6.63	7.21									
c & a	0.98	6.3	59.18	Group c	Group a								
									Cyclopoida copepodites	6.89	0.00	7.54 ± 9.5	12.73
									Nauplii	8.88	3.28	6.11 ± 4.73	10.33
									Harpacticoida copepodites	4.87	0.00	5.38 ± 7.31	9.08
									<i>Oithona davisae</i>	4.88	0.00	5.36 ± 2.57	9.05
									<i>Oithona nana</i>	5.71	1.81	4.27 ± 6.63	7.21