

Systematics and Biodiversity supplementary material for

Mote et al. 2018 – A new clionaid sponge infests live corals on the west coast of India (Porifera, Demospongiae, Clionaida)



Supplementary Figure S1. *Cliona thomasi* sp. nov. in situ at Malvan Marine Sanctuary, West India.

Supplementary tables S2.1-2.5. Raw data and descriptive statistics for tylostyle dimensions of four specimens of *Cliona thomasi* sp. nov. from two sites, not distinguishing between putative length classes while measuring. This approach allowed a biometric assessment of whether more than one tylostyle size class occurred (S3): We observed that a small number of tylostyles seemed to be unusually short and wide (pink) and visually different from the main type of tylostyles (blue). Descriptive statistics here included all tylostyles regardless of their length and is highlighted in purple underneath each set of raw data. If available, for each sample the first encountered 100 fully formed (mature), undamaged and normally shaped choanosomal tylostyles were measured. Fully formed tylostyles in *C. thomasi* sp. nov. were recognized as having a length : width ratio of <30 (dimension-free value). SD – standard deviation, Coef. var. – coefficient of variation (= SD in % of the mean).

S2.1: *Cliona thomasi* sp. nov. holotype NIO – 1002 (= MGB 35), Grande Island, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	198.50	8.50	23.35	11.50	12.75
2	207.50	10.50	19.76	13.25	13.75
3	225.50	10.25	22.00	10.75	11.75
4	251.00	12.75	19.69	16.75	16.00
5	255.50	14.25	17.93	17.00	15.50
6	256.50	10.00	25.65	11.25	15.00
7	260.00	10.75	24.19	13.25	12.75
8	261.00	10.75	24.28	14.50	13.00
9	265.50	12.75	20.82	12.75	10.75
10	269.50	14.25	18.91	16.25	15.75
11	270.50	10.00	27.05	10.50	9.25
12	270.50	12.25	22.08	16.00	16.75
13	274.00	14.25	19.23	15.50	15.25
14	276.00	9.75	28.31	13.50	13.00
15	280.50	13.75	20.40	15.50	14.25
16	280.50	9.75	28.77	13.00	13.25
17	281.50	12.25	22.98	15.00	15.00
18	284.00	13.50	21.04	15.50	16.00
19	285.00	14.50	19.66	18.00	17.50
20	286.00	12.50	22.88	15.50	16.75
21	288.00	12.25	23.51	15.50	14.75
22	291.50	15.50	18.81	18.00	17.75
23	292.50	15.25	19.18	19.00	17.25
24	293.50	12.75	23.02	15.75	15.75
25	296.00	15.25	19.41	17.75	19.25
26	297.50	14.75	20.17	15.75	15.25
27	298.50	17.25	17.30	18.00	17.50
28	302.50	14.25	21.23	13.25	12.00
29	304.50	16.00	19.03	15.25	16.25
30	306.00	15.25	20.07	16.50	15.25
31	307.00	11.75	26.13	13.00	13.00
32	308.00	14.75	20.88	19.00	18.00
33	308.50	14.75	20.92	18.25	18.75
34	309.00	13.25	23.32	15.50	15.25
35	310.00	14.50	21.38	16.00	17.50
36	313.50	12.25	25.59	13.75	16.00
37	316.00	14.25	22.18	17.00	16.75
38	316.50	13.50	23.44	17.75	17.25
39	318.00	13.25	24.00	13.50	14.25

S2.1: *Cliona thomasi* sp. nov. holotype NIO – 1002 (= MGB 35), Grande Island, West IndiaDimensions of choanosomal spicules [μm], N = 100 spicules

Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
40	318.50	15.50	20.55	18.25	17.50
41	320.50	16.50	19.42	19.75	17.50
42	321.00	15.25	21.05	17.75	17.00
43	322.00	15.25	21.11	18.25	18.75
44	322.00	15.75	20.44	17.75	18.50
45	322.00	16.75	19.22	17.50	16.75
46	322.50	15.75	20.48	19.25	19.00
47	324.50	15.75	20.60	18.50	17.75
48	325.00	15.25	21.31	18.00	17.25
49	325.00	13.25	24.53	13.50	14.00
50	325.50	16.25	20.03	18.25	16.75
51	327.50	15.75	20.79	19.25	17.50
52	327.50	15.50	21.13	18.25	17.25
53	330.50	14.75	22.41	18.00	17.00
54	332.00	15.75	21.08	19.25	19.50
55	332.00	12.50	26.56	15.25	15.00
56	332.50	11.75	28.30	14.75	14.50
57	334.00	15.00	22.27	17.75	16.50
58	334.50	17.25	19.39	17.75	20.00
59	336.50	13.25	25.40	16.00	15.75
60	338.00	11.75	28.77	12.75	12.75
61	338.00	18.25	18.52	19.50	19.25
62	338.00	14.50	23.31	16.50	17.00
63	341.00	11.75	29.02	13.25	14.50
64	341.00	14.00	24.36	15.50	15.00
65	341.50	12.75	26.78	15.75	16.00
66	342.50	13.00	26.35	17.00	15.75
67	344.00	14.25	24.14	18.25	17.50
68	346.50	14.25	24.32	16.50	18.25
69	351.00	15.25	23.02	17.25	17.00
70	351.00	17.50	20.06	20.25	19.25
71	352.00	17.00	20.71	15.75	13.50
72	352.00	15.00	23.47	19.25	16.75
73	353.00	15.25	23.15	18.25	18.50
74	353.00	15.50	22.77	19.00	17.00
75	355.50	14.25	24.95	17.25	17.25
76	356.00	12.25	29.06	16.00	15.25
77	356.00	12.25	29.06	16.25	16.75
78	357.50	13.00	27.50	16.50	15.75
79	358.00	17.75	20.17	19.50	18.00
80	358.50	15.25	23.51	17.75	16.75
81	359.00	16.00	22.44	18.25	18.25
82	359.00	14.75	24.34	17.25	17.25
83	359.50	15.00	23.97	17.25	16.75
84	361.50	15.75	22.95	18.25	23.00
85	362.00	13.00	27.85	16.25	15.50
86	363.50	12.00	30.29	13.75	15.50
87	364.00	12.75	28.55	16.75	16.50
88	371.00	12.50	29.68	16.00	16.00
89	372.50	15.50	24.03	17.50	19.75
90	373.00	12.75	29.25	14.75	15.75
91	373.00	12.50	29.84	14.50	15.25
92	377.00	15.75	23.94	18.50	19.50
93	378.50	12.50	30.28	15.75	15.00
94	378.50	12.50	30.28	13.25	17.00

S2.1: *Cliona thomasi* sp. nov. holotype NIO – 1002 (= MGB 35), Grande Island, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
95	381.00	15.00	25.40	18.00	18.75
96	381.50	14.75	25.86	16.75	16.50
97	382.00	16.75	22.81	19.50	18.25
98	384.50	15.75	24.41	19.25	19.00
99	391.00	12.75	30.67	16.25	16.00
100	398.50	13.00	30.65	15.25	18.50
Minimum	198.50	8.50	17.30	10.50	9.25
Mean	323.46	13.97	23.45	16.38	16.31
Maximum	398.50	18.25	30.67	20.25	23.00
SD	40.68	1.98	3.46	2.19	2.16
Coef. var.	12.58	14.15	14.76	13.35	13.24

S2.2: *Cliona thomasi* sp. nov. paratype 1 – NIO 1005 (= MGB 33), Grande Island, West India

Dimensions of choanosomal spicules [μm], N = 62 spicules (= all available in preparation)					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	219.50	10.25	21.41	12.75	12.75
2	238.00	10.00	23.80	11.75	12.25
3	258.00	12.25	21.06	13.00	14.75
4	261.00	10.00	26.10	11.25	13.25
5	268.00	10.25	26.15	12.00	14.00
6	270.50	10.75	25.16	14.25	14.00
7	272.50	14.50	18.79	15.50	14.50
8	283.00	12.25	23.10	13.00	13.50
9	287.50	11.00	26.14	12.00	13.75
10	288.50	12.50	23.08	14.00	15.50
11	288.50	12.50	23.08	14.75	16.50
12	290.00	12.25	23.67	14.25	15.50
13	295.00	12.50	23.60	15.75	16.75
14	296.50	10.75	27.58	14.00	14.00
15	302.50	13.00	23.27	15.75	16.00
16	311.00	13.25	23.47	15.50	15.50
17	322.00	12.25	26.29	15.25	17.00
18	323.50	12.25	26.41	13.50	15.50
19	325.50	17.75	18.34	17.75	18.25
20	329.50	11.75	28.04	13.75	16.00
21	336.50	15.00	22.43	16.25	17.75
22	336.50	12.25	27.47	13.50	15.25
23	339.50	12.50	27.16	12.25	15.75
24	340.00	16.75	20.30	15.75	17.50
25	340.50	14.00	24.32	16.00	17.00
26	340.50	15.75	21.62	18.00	17.50
27	340.50	13.00	26.19	16.00	17.50
28	341.00	13.25	25.74	16.25	16.75
29	342.00	15.50	22.06	18.00	17.00
30	343.00	16.75	20.48	17.50	17.50
31	344.00	15.25	22.56	16.50	16.50
32	346.50	13.50	25.67	15.75	17.00
33	346.50	14.00	24.75	16.50	16.00
34	347.50	14.25	24.39	17.75	17.25
35	350.50	15.25	22.98	17.50	18.00
36	351.00	12.50	28.08	16.50	16.50
37	354.50	14.25	24.88	16.50	17.25

S2.2: *Cliona thomasi* sp. nov. **paratype 1** – **NIO 1005** (= MGB 33), Grande Island, West India

Dimensions of choanosomal spicules [μm], N = 62 spicules (= all available in preparation)

Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
38	356.00	12.50	28.48	13.50	12.75
39	357.50	15.00	23.83	15.75	16.75
40	359.00	13.25	27.09	15.50	16.75
41	359.00	15.75	22.79	17.00	16.50
42	360.00	12.50	28.80	15.50	16.75
43	363.00	18.00	20.17	20.75	19.75
44	363.00	15.50	23.42	17.25	18.00
45	366.50	13.25	27.66	14.75	15.25
46	370.50	17.00	21.79	17.75	19.00
47	371.00	15.50	23.94	15.50	15.75
48	373.50	14.50	25.76	16.25	16.75
49	373.50	15.50	24.10	17.25	17.25
50	373.50	16.00	23.34	16.75	15.50
51	374.00	16.75	22.33	18.25	19.50
52	377.50	14.50	26.03	14.25	16.25
53	379.50	15.25	24.89	18.00	20.25
54	379.50	17.25	22.00	18.50	19.75
55	385.00	17.50	22.00	17.75	18.00
56	389.00	14.25	27.30	16.00	18.50
57	390.50	17.50	22.31	18.50	20.50
58	391.50	16.50	23.73	18.00	17.75
59	394.00	17.00	23.18	19.25	19.75
60	395.50	17.25	22.93	16.00	19.25
61	398.00	15.50	25.68	16.75	20.75
62	406.50	16.25	25.02	17.75	17.50
Minimum	219.50	10.00	18.34	11.25	12.25
Mean	338.35	14.12	24.16	15.79	16.64
Maximum	406.50	18.00	28.80	20.75	20.75
SD	42.78	2.18	2.39	2.03	1.97
Coef. var.	12.64	15.43	9.91	12.87	11.81

S2.3: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P2** (= MGB 21), Malvan Marine Sanctuary, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules

Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	193.00	7.50	25.73	11.25	8.00
2	201.50	10.00	20.15	12.75	14.50
3	223.00	9.25	24.11	11.75	13.00
4	227.50	10.25	22.20	13.75	14.50
5	227.50	10.50	21.67	13.50	14.75
6	236.00	11.50	20.52	14.00	13.50
7	253.50	11.25	22.53	15.25	14.75
8	254.00	15.00	16.93	16.50	15.50
9	255.50	12.25	20.86	15.25	15.00
10	266.50	10.25	26.00	13.25	14.25
11	274.00	10.50	26.10	12.75	12.75
12	279.50	13.25	21.09	17.50	17.00
13	281.50	14.25	19.75	18.25	16.75
14	282.50	12.25	23.06	12.50	11.25
15	286.00	12.50	22.88	15.75	14.25
16	286.00	10.75	26.60	14.25	13.75
17	288.50	12.00	24.04	16.00	15.50

S2.3: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P2** (= MGB 21), Malvan Marine Sanctuary, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
18	289.00	12.25	23.59	17.75	18.00
19	290.00	15.25	19.02	16.50	13.75
20	290.50	11.75	24.72	15.50	16.75
21	295.00	14.00	21.07	15.75	16.75
22	299.50	14.00	21.39	16.00	17.25
23	303.50	14.50	20.93	19.00	17.75
24	306.50	14.25	21.51	14.75	14.25
25	308.50	11.25	27.42	14.00	12.25
26	313.50	13.50	23.22	15.25	15.50
27	313.50	11.75	26.68	15.00	15.75
28	316.00	14.25	22.18	17.25	17.25
29	318.00	13.25	24.00	16.00	16.50
30	320.50	15.25	21.02	16.75	17.75
31	323.00	13.00	24.85	16.00	16.50
32	324.00	13.75	23.56	14.00	14.25
33	325.50	15.50	21.00	15.50	16.25
34	325.50	15.00	21.70	17.75	17.75
35	326.00	11.75	27.74	15.75	16.50
36	326.50	13.75	23.75	15.25	14.75
37	328.00	17.00	19.29	18.00	17.25
38	328.50	15.75	20.86	17.50	16.25
39	331.00	14.75	22.44	17.75	17.75
40	332.50	15.50	21.45	19.00	17.25
41	332.50	16.25	20.46	20.00	19.00
42	334.00	14.25	23.44	17.75	17.50
43	334.00	12.75	26.20	15.00	15.75
44	340.00	12.00	28.33	15.75	15.75
45	340.50	15.75	21.62	20.50	18.25
46	340.50	14.25	23.89	17.25	16.75
47	340.50	16.25	20.95	17.25	15.25
48	341.00	17.00	20.06	20.25	17.75
49	342.00	16.25	21.05	17.00	16.25
50	343.50	15.75	21.81	17.50	16.50
51	344.00	15.00	22.93	15.75	15.75
52	344.00	14.00	24.57	13.00	15.25
53	344.00	14.93	23.05	17.50	18.25
54	344.50	13.25	26.00	15.00	15.75
55	345.00	17.25	20.00	19.75	18.00
56	345.50	13.00	26.58	15.75	15.25
57	345.50	17.00	20.32	18.25	18.25
58	346.00	16.75	20.66	19.00	19.75
59	346.50	12.25	28.29	16.00	15.50
60	348.50	17.50	19.91	17.00	18.00
61	348.50	18.25	19.10	18.00	19.25
62	350.50	17.00	20.62	18.25	18.50
63	352.00	13.00	27.08	15.00	17.75
64	353.00	17.50	20.17	18.00	18.00
65	353.50	16.00	22.09	17.75	20.00
66	354.00	15.50	22.84	18.50	18.50
67	355.00	14.00	25.36	15.25	13.75
68	355.50	16.25	21.88	18.75	19.00
69	356.50	14.25	25.02	16.00	14.75
70	358.00	14.00	25.57	16.75	16.00
71	359.00	15.00	23.93	17.75	18.25

S2.3: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P2** (= MGB 21), Malvan Marine Sanctuary, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
72	359.00	14.50	24.76	17.00	15.50
73	366.00	14.75	24.81	13.50	16.50
74	368.00	15.00	24.53	17.75	17.50
75	368.50	17.00	21.68	18.50	18.25
76	368.50	15.50	23.77	18.50	18.25
77	368.50	17.25	21.36	20.25	19.25
78	369.50	14.25	25.93	14.25	15.75
79	370.00	16.25	22.77	19.50	18.25
80	370.00	17.00	21.76	17.50	17.00
81	374.00	16.00	23.38	20.00	20.50
82	374.00	15.75	23.75	19.00	17.75
83	374.50	15.75	23.78	19.00	18.00
84	375.50	16.50	22.76	16.75	16.75
85	377.50	15.75	23.97	17.25	19.25
86	379.00	16.25	23.32	17.75	19.25
87	381.50	16.50	23.12	18.25	17.50
88	385.00	15.50	24.84	17.50	17.25
89	386.50	17.00	22.74	18.00	19.50
90	388.50	16.00	24.28	20.75	16.75
91	391.50	15.75	24.86	17.00	16.75
92	393.00	15.50	25.35	16.00	19.00
93	393.50	15.00	26.23	17.50	17.25
94	395.00	14.75	26.78	16.75	18.00
95	397.00	16.25	24.43	18.75	18.75
96	401.50	15.50	25.90	19.50	18.25
97	406.00	15.50	26.19	18.75	19.00
98	409.00	15.25	26.82	18.00	17.50
99	414.00	12.50	33.12	15.50	16.00
100	414.00	17.50	23.66	19.75	20.00
Minimum	193.00	7.50	16.93	11.25	8.00
Mean	334.07	14.42	23.32	16.74	16.65
Maximum	414.00	18.25	33.12	20.75	20.50
SD	47.26	2.14	2.55	2.07	2.05
Coef. var.	14.15	14.85	10.95	12.37	12.31

S2.4: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P4** (= MGB 23), Malvan Marine Sanctuary, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	225.00	11.75	19.15	15.25	13.50
2	256.50	12.25	20.94	15.25	14.00
3	276.00	12.50	22.08	14.50	13.50
4	278.00	13.25	20.98	15.50	15.75
5	296.50	12.75	23.25	15.00	13.50
6	298.00	13.75	21.67	15.50	14.25
7	298.50	16.00	18.66	17.75	18.75
8	306.50	12.75	24.04	14.50	15.00
9	307.00	12.75	24.08	16.25	14.00
10	314.50	12.50	25.16	14.50	15.00
11	316.00	15.00	21.07	15.50	14.50
12	316.00	13.25	23.85	13.00	16.50

S2.4: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P4** (= MGB 23), Malvan Marine Sanctuary, West India

Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
13	322.50	17.50	18.43	17.75	16.50
14	324.00	15.25	21.25	17.00	16.00
15	330.50	14.25	23.19	15.75	16.00
16	330.50	14.50	22.79	14.50	15.50
17	333.00	14.75	22.58	15.75	16.75
18	336.50	16.00	21.03	16.50	17.50
19	337.00	14.00	24.07	15.25	14.25
20	342.00	15.25	22.43	16.25	16.25
21	342.50	14.50	23.62	15.25	16.25
22	344.00	13.25	25.96	15.25	16.00
23	345.50	15.25	22.66	15.50	15.75
24	347.00	15.25	22.75	15.50	15.25
25	347.00	14.25	24.35	14.00	15.00
26	347.50	15.50	22.42	14.75	19.25
27	348.50	16.75	20.81	16.00	16.50
28	349.00	14.75	23.66	17.75	17.25
29	351.00	16.25	21.60	17.75	17.50
30	353.50	16.75	21.10	17.00	19.50
31	355.00	17.25	20.58	15.25	14.25
32	356.50	14.75	24.17	16.50	15.25
33	357.00	14.00	25.50	14.75	14.50
34	358.00	18.25	19.62	18.50	15.75
35	358.50	17.50	20.49	16.50	18.50
36	362.00	16.75	21.61	16.25	14.25
37	362.50	17.50	20.71	17.25	17.50
38	363.50	15.25	23.84	16.75	16.75
39	366.50	15.75	23.27	16.75	16.50
40	367.00	16.25	22.58	15.50	12.75
41	367.50	15.00	24.50	16.75	16.75
42	369.00	15.25	24.20	17.00	16.25
43	370.00	17.00	21.76	17.75	16.75
44	370.00	15.25	24.26	18.00	17.00
45	370.00	15.00	24.67	16.00	16.00
46	371.00	17.50	21.20	18.00	16.75
47	371.00	17.25	21.51	17.00	15.75
48	373.50	16.25	22.98	18.75	18.50
49	374.50	14.50	25.83	17.00	16.25
50	374.50	16.75	22.36	16.50	15.00
51	375.00	16.50	22.73	15.50	17.00
52	375.00	15.00	25.00	15.75	11.25
53	375.50	16.75	22.42	16.75	17.00
54	377.00	15.00	25.13	17.25	18.50
55	378.00	17.50	21.60	15.50	17.00
56	380.00	17.75	21.41	15.50	17.00
57	380.50	15.00	25.37	16.50	15.75
58	382.00	17.50	21.83	17.00	18.25
59	385.50	17.00	22.68	15.75	15.75
60	385.50	15.50	24.87	19.00	18.50
61	386.00	15.00	25.73	15.50	15.50
62	387.00	17.25	22.43	14.00	16.50
63	387.50	17.50	22.14	18.25	16.50
64	387.50	15.00	25.83	17.00	17.50
65	388.00	17.50	22.17	17.00	13.25
66	389.00	18.75	20.75	18.50	17.00

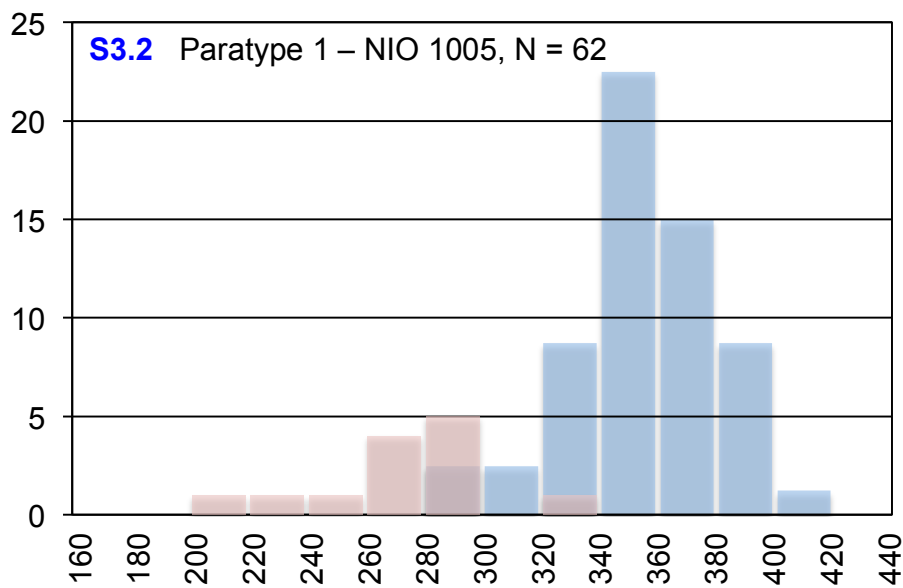
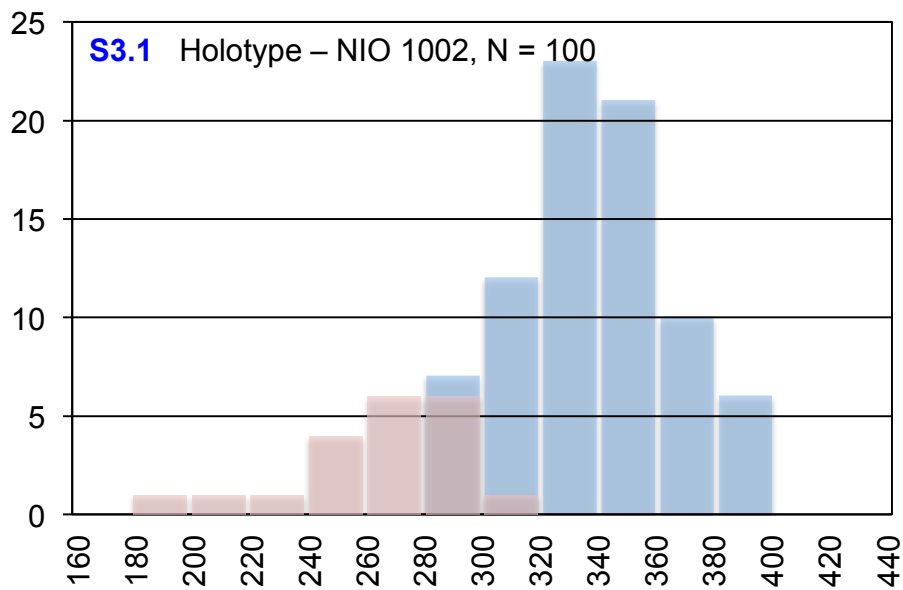
S2.4: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P4** (= MGB 23), Malvan Marine Sanctuary, West India

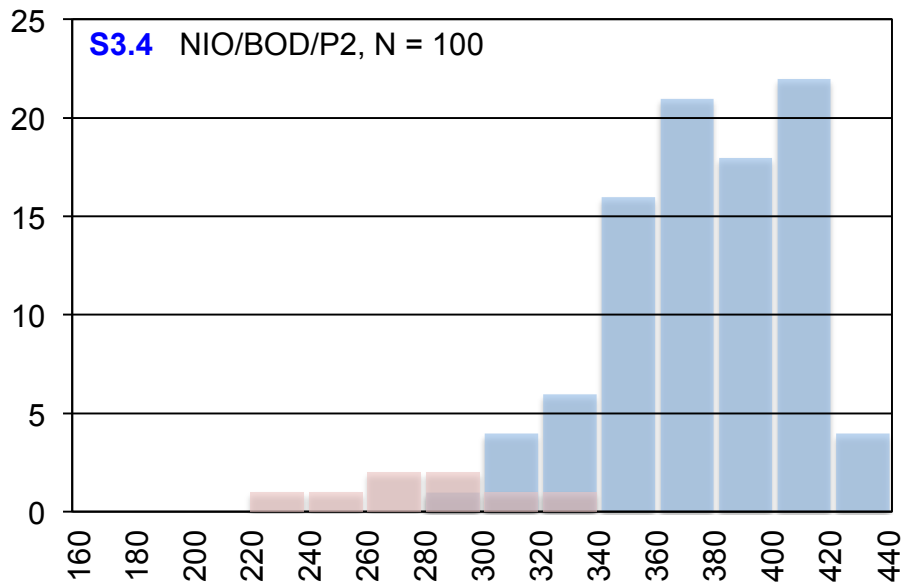
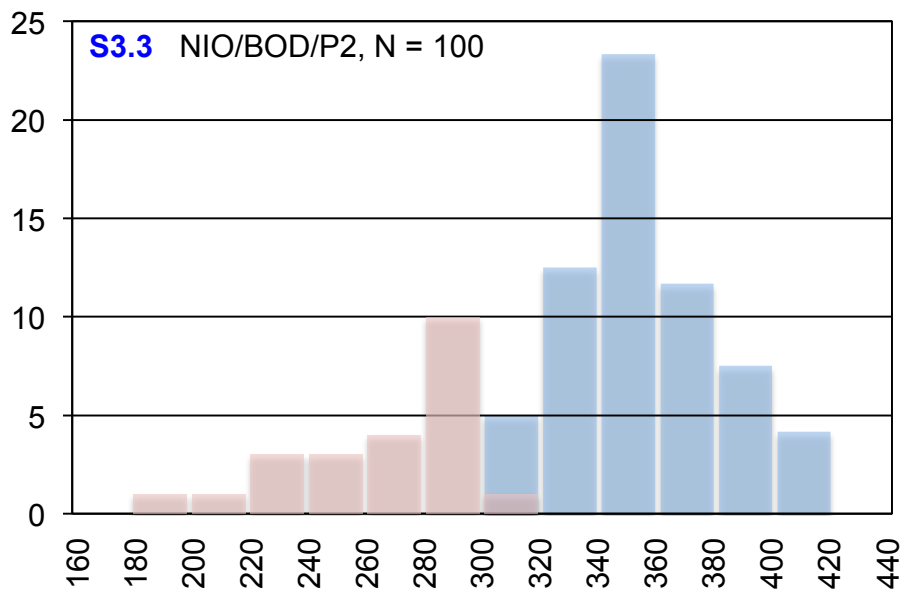
Dimensions of choanosomal spicules [μm], N = 100 spicules					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
67	391.00	18.25	21.42	18.00	16.50
68	392.00	15.50	25.29	17.00	16.25
69	392.50	18.75	20.93	17.00	16.75
70	393.50	16.00	24.59	16.25	18.75
71	394.00	18.00	21.89	18.00	18.00
72	395.00	16.50	23.94	16.75	15.25
73	398.00	17.25	23.07	17.25	16.25
74	399.50	16.00	24.97	15.50	13.25
75	400.50	17.25	23.22	15.75	19.50
76	400.50	18.00	22.25	17.75	17.50
77	401.50	18.25	22.00	15.00	15.25
78	402.50	18.25	22.05	16.75	17.75
79	403.50	18.25	22.11	17.75	16.75
80	404.50	18.25	22.16	18.50	17.00
81	404.50	18.25	22.16	18.00	17.50
82	406.00	17.50	23.20	17.75	17.50
83	406.00	17.50	23.20	16.50	16.25
84	406.50	18.00	22.58	18.00	16.75
85	409.00	15.75	25.97	14.75	15.75
86	409.50	18.25	22.44	17.00	17.00
87	410.50	16.00	25.66	17.00	17.00
88	410.50	18.25	22.49	18.00	18.00
89	411.00	18.75	21.92	17.75	17.75
90	413.00	17.75	23.27	17.75	17.50
91	413.00	18.25	22.63	18.00	17.00
92	413.50	17.00	24.32	18.00	17.50
93	415.00	16.75	24.78	15.50	15.75
94	416.50	16.75	24.87	19.25	17.75
95	418.50	17.00	24.62	16.50	16.50
96	420.00	17.00	24.71	15.75	17.75
97	422.00	17.25	24.46	15.25	15.50
98	426.00	17.00	25.06	18.00	18.00
99	426.50	17.50	24.37	17.75	19.00
100	430.50	17.75	24.25	17.75	15.50
Minimum	225.00	11.75	18.43	13.00	11.25
Mean	369.13	16.13	22.94	16.53	16.35
Maximum	430.50	18.75	25.97	19.25	19.50
SD	39.73	1.72	1.69	1.28	1.56
Coef. var.	10.76	10.65	7.38	7.73	9.52

S2.5: *Cliona thomasi* sp. nov. tylostyle dimensions across all above means, from **cotypes NIO 1002, 1005** and additional material **NIO/BOD/P2, NIO/BOD/P4** (= MGB 35, 33, 21, 23), West India

Choanosomal spicules N = 4 specimens					
Tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
Minimum	323.46	13.97	22.94	15.79	16.31
Mean	341.25	14.66	23.47	16.36	16.49
Maximum	369.13	16.13	24.16	16.74	16.65
SD	19.61	1.00	0.51	0.41	0.18
Coef. var.	5.75	6.81	2.17	2.49	1.11

Supplementary figures S3.1-3.4. Size frequency distributions of tylostyle lengths for four specimens of *Cliona thomasi* sp. nov. (see S2), assessing the possibility of two size classes for tylostyles. Shorter tylostyles are here tentatively distinguished from the longer and slightly less robust tylostyles, as they were perceived as different. However, they could not always be clearly separated by using size frequency distributions. There was an overlap, and the size difference was only small (in choanosomal material, the shorter tylostyles were on average 77% of the mean length of the longer tylostyles across all 11 West Indian specimens here assessed). If available, for each sample the first encountered 100 fully formed (= mature), undamaged and normally shaped choanosomal tylostyles were measured for the four histograms. Fully formed tylostyles in *C. thomasi* sp. nov. were recognized as having a length : ratio of <30 (dimension-free value).

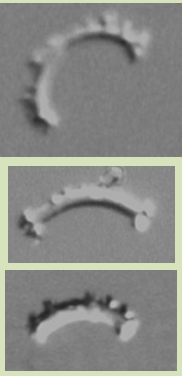
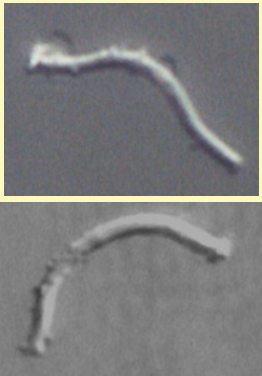




Supplementary tables S4.1-4.12. Raw data and descriptive statistics for spicule dimensions for *Cliona thomasi* sp. nov., distinguishing between putative spicule types. We perceived the occurrence of two different tylostyle length classes (longer and shorter) and possible spiraster types (1: the “normal type” – delicate, mostly C-shaped with spine-bouquets along the concave side in quite regular distribution, and 2: an aberrant (?) type – thicker, often centrotyle and bow- or toxa-shaped spirasters with often reduced and less regularly distributed spines). For each sample the first encountered 20 fully formed (= mature), undamaged and normally shaped spicules were measured. Fully formed tylostyles in *C. thomasi* sp. nov. were recognized as having a length : ratio of <30. SD – standard deviation, Coef. var. – coefficient of variation (= SD in % of the mean). In four samples the material was divided into a choanosomal sample and one shaved from the surface and thus containing a large proportion of ectosomal material, assessing whether dermal tylostyles were shorter.

S4.1: *Cliona thomasi* sp. nov. **holotype** – NIO 1002 (= MGB 35), Grande Island, West India; spirasters were variable and included a low amount of centrotylar forms in the choanosme (13%)

Dimensions of choanosomal spicules [μm], N = 20 spicules					
Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	324.50	15.75	20.60	18.50	17.75
2	358.50	15.25	23.51	17.75	16.75
3	321.00	15.25	21.05	17.75	17.00
4	332.00	15.75	21.08	19.25	19.50
5	357.50	13.00	27.50	16.50	15.75
6	372.50	15.50	24.03	17.50	19.75
7	307.00	11.75	26.13	13.00	13.00
8	316.00	14.25	22.18	17.00	16.75
9	381.50	14.75	25.86	16.75	16.50
10	313.50	12.25	25.59	13.75	16.00
11	377.00	15.75	23.94	18.50	19.50
12	346.50	14.25	24.32	16.50	18.25
13	352.00	17.00	20.71	15.75	13.50
14	359.00	16.00	22.44	18.25	18.25
15	359.00	14.75	24.34	17.25	17.25
16	318.50	15.50	20.55	18.25	17.50
17	359.50	15.00	23.97	17.25	16.75
18	351.00	15.25	23.02	17.25	17.00
19	308.00	14.75	20.88	19.00	18.00
20	336.50	13.25	25.40	16.00	15.75
Minimum	307.00	11.75	20.55	13.00	13.00
Mean	342.55	14.75	23.35	17.09	17.03
Maximum	381.50	17.00	27.50	19.25	19.75
SD	23.63	1.31	2.11	1.59	1.75
Coef. var.	6.90	8.88	9.05	9.28	10.25
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	286.00	12.50	22.88	15.50	16.75
2	269.50	14.25	18.91	16.25	15.75
3	284.00	13.50	21.04	15.50	16.00
4	293.50	12.75	23.02	15.75	15.75
5	280.50	13.75	20.40	15.50	14.25
6	285.00	14.50	19.66	18.00	17.50
7	225.50	10.25	22.00	10.75	11.75
8	296.00	15.25	19.41	17.75	19.25

9	251.00	12.75	19.69	16.75	16.00	
10	261.00	10.75	24.28	14.50	13.00	
11	207.50	10.50	19.76	13.25	13.75	
12	281.50	12.25	22.98	15.00	15.00	
13	256.50	10.00	25.65	11.25	15.00	
14	265.50	12.75	20.82	12.75	10.75	
15	260.00	10.75	24.19	13.25	12.75	
16	255.50	14.25	17.93	17.00	15.50	
17	198.50	8.50	23.35	11.50	12.75	
18	292.50	15.25	19.18	19.00	17.25	
19	291.50	15.50	18.81	18.00	17.75	
20	274.00	14.25	19.23	15.50	15.25	
Minimum	198.50	8.50	17.93	10.75	10.75	
Mean	265.75	12.71	21.16	15.14	15.09	
Maximum	296.00	15.50	25.65	19.00	19.25	
SD	27.84	2.01	2.21	2.38	2.15	
Coef. var.	10.48	15.80	10.46	15.69	14.28	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2?-Length	2?-Width	2?-Bends
E.g.						
1	19.50	1.50	1.0	27.75	0.75	1.5
2	20.25	1.75	0.0	16.50	2.00	1.0
3	25.25	2.00	0.5	29.00	1.00	2.0
4	14.25	0.75	1.0	17.50	1.75	0.0
5	18.25	1.25	1.0	20.25	1.75	0.0
6	20.00	1.25	1.0	14.50	1.75	0.5
7	13.00	1.00	1.0	11.25	1.75	0.0
8	20.75	1.25	2.0	23.00	1.50	1.0
9	13.25	1.50	0.5	19.50	2.50	0.5
10	19.00	1.75	1.0	23.75	1.50	2.0
11	24.25	1.75	2.0	25.25	1.75	1.0
12	20.50	2.25	1.0	20.50	1.75	1.0
13	16.75	1.50	1.0	15.50	1.00	1.0
14	20.25	0.75	1.0	25.75	1.25	3.0
15	15.50	2.25	1.0	24.50	2.00	0.5
16	21.75	1.50	0.5	19.25	1.25	1.0
17	18.75	1.50	1.0	15.25	2.00	1.0
18	18.50	1.50	1.0	13.50	2.50	1.0
19	15.00	1.00	1.0	23.00	2.25	0.0
20	17.75	1.75	1.0	19.00	1.75	1.0
Minimum	13.00	0.75	0.00	11.25	0.75	0.00
Mean	18.63	1.49	0.98	20.23	1.69	0.95
Maximum	25.25	2.25	2.00	29.00	2.50	3.00
SD	3.31	0.43	0.44	4.95	0.47	0.76
Coef. var.	17.78	28.58	45.49	24.47	27.98	79.91

Dimensions of mostly ectosomal spicules [µm], N = 20 spicules					
Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	309.00	12.50	24.72	15.25	15.75
2	314.00	12.75	24.63	15.50	15.25
3	318.50	17.00	18.74	17.25	16.50
4	320.00	14.50	22.07	14.50	14.50
5	330.50	15.00	22.03	18.25	16.25
6	339.00	14.50	23.38	13.00	16.00
7	339.00	14.75	22.98	13.00	14.50
8	342.00	15.25	22.43	17.75	18.25
9	345.00	15.00	23.00	17.75	20.25
10	347.50	17.00	20.44	18.50	17.75
11	348.50	15.00	23.23	17.00	16.75
12	348.50	14.75	23.63	16.75	17.50
13	353.50	17.25	20.49	20.00	20.25
14	353.50	15.25	23.18	18.00	17.50
15	355.00	15.00	23.67	17.75	17.75
16	356.50	16.75	21.28	19.75	17.50
17	357.50	14.00	25.54	17.00	16.25
18	367.00	16.25	22.58	18.50	18.25
19	374.00	13.75	27.20	17.00	16.00
20	384.50	15.00	25.63	17.25	17.75
Minimum	309.00	12.50	18.74	13.00	14.50
Mean	345.15	15.06	23.04	16.99	17.03
Maximum	384.50	17.25	27.20	20.00	20.25
SD	19.63	1.30	1.97	1.91	1.58
Coef. var.	5.69	8.65	8.56	11.22	9.26
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	261.50	12.50	20.92	12.75	14.50
2	262.50	12.25	21.43	15.00	15.00
3	275.00	12.75	21.57	16.00	15.00
4	281.50	13.00	21.65	14.25	14.00
5	283.00	15.00	18.87	17.75	17.25
6	283.00	15.00	18.87	17.75	16.00
7	285.00	15.25	18.69	17.50	17.00
8	286.00	11.25	25.42	15.00	15.00
9	290.00	12.25	23.67	14.00	14.25
10	290.00	13.25	21.89	15.50	14.25
11	290.50	14.25	20.39	16.75	15.50
12	292.50	13.25	22.08	15.75	15.00
13	292.50	15.00	19.50	18.00	17.50
14	292.50	14.25	20.53	16.75	16.50
15	293.50	14.00	20.96	11.50	14.25
16	295.00	14.25	20.70	16.25	18.25
17	295.00	12.50	23.60	15.25	15.75
18	298.50	15.25	19.57	17.75	17.50
19	305.50	14.75	20.71	16.25	15.50
20	306.50	16.00	19.16	18.75	18.50
Minimum	261.50	11.25	18.69	11.50	14.00
Mean	287.98	13.80	21.01	15.93	15.83
Maximum	306.50	16.00	25.42	18.75	18.50
SD	11.67	1.30	1.77	1.85	1.41
Coef. var.	4.05	9.40	8.41	11.60	8.94

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	12.50	1.75	1.0			
2	13.25	2.25	0.5			
3	15.00	1.75	1.0			
4	15.00	0.75	1.0			
5	15.50	1.00	1.0			
6	16.50	1.50	1.0			
7	16.75	1.25	1.0			
8	16.75	1.25	1.0			
9	17.00	2.00	1.0			
10	17.50	1.00	1.0			
11	17.75	1.50	1.0		NA	
12	18.00	0.75	1.0			
13	18.25	0.75	1.0			
14	18.25	1.50	1.0			
15	18.25	0.75	2.0			
16	18.50	2.50	1.0			
17	21.75	2.00	1.0			
18	22.75	1.25	1.0			
19	23.25	1.75	1.0			
20	24.00	2.00	1.0			
Minimum	12.50	0.75	0.50			
Mean	17.83	1.46	1.03			
Maximum	24.00	2.50	2.00		NA	
SD	3.11	0.53	0.26			
Coef. var.	17.45	36.48	24.90			

S4.2: *Cliona thomasi* sp. nov. **paratype 1 – NIO 1005** (= MGB 33), Grande Island, West India; the short tylostyles were slightly slimmer than in the other specimens (higher length : width ratio)

Dimensions of choanosomal spicules [μm], N = 20 spicules, except for short tylostyles, where N = 14

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	325.50	17.75	18.34	17.75	18.25
2	329.50	11.75	28.04	13.75	16.00
3	336.50	15.00	22.43	16.25	17.75
4	340.00	16.75	20.30	15.75	17.50
5	340.50	14.00	24.32	16.00	17.00
6	341.00	13.25	25.74	16.25	16.75
7	343.00	16.75	20.48	17.50	17.50
8	344.00	15.25	22.56	16.50	16.50
9	351.00	12.50	28.08	16.50	16.50
10	354.50	14.25	24.88	16.50	17.25
11	357.50	15.00	23.83	15.75	16.75
12	359.00	13.25	27.09	15.50	16.75
13	359.00	15.75	22.79	17.00	16.50
14	370.50	17.00	21.79	17.75	19.00
15	371.00	15.50	23.94	15.50	15.75
16	373.50	14.50	25.76	16.25	16.75
17	373.50	15.50	24.10	17.25	17.25
18	379.50	15.25	24.89	18.00	20.25
19	389.00	14.25	27.30	16.00	18.50
20	398.00	15.50	25.68	16.75	20.75

Minimum	325.50	11.75	18.34	13.75	15.75	
Mean	356.80	14.94	24.12	16.43	17.46	
Maximum	398.00	17.75	28.08	18.00	20.75	
SD	19.91	1.53	2.64	0.99	1.32	
Coef. var.	5.58	10.23	10.96	6.01	7.54	
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height	
1	219.50	10.25	21.41	12.75	12.75	
2	238.00	10.00	23.80	11.75	12.25	
3	258.00	12.25	21.06	13.00	14.75	
4	261.00	10.00	26.10	11.25	13.25	
5	268.00	10.25	26.15	12.00	14.00	
6	270.50	10.75	25.16	14.25	14.00	
7	272.50	14.50	18.79	15.50	14.50	
8	283.00	12.25	23.10	13.00	13.50	
9	287.50	11.00	26.14	12.00	13.75	
10	288.50	12.50	23.08	14.00	15.50	
11	288.50	12.50	23.08	14.75	16.50	
12	290.00	12.25	23.67	14.25	15.50	
13	295.00	12.50	23.60	15.75	16.75	
14	296.50	10.75	27.58	14.00	14.00	
Minimum	219.50	10.00	18.79	11.25	12.25	
Mean	272.61	11.55	23.77	13.45	14.36	
Maximum	296.50	14.50	27.58	15.75	16.75	
SD	22.53	1.32	2.36	1.41	1.33	
Coef. var.	8.27	11.42	9.92	10.50	9.23	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	10.75	0.75	1			
2	15.50	0.50	1			
3	15.75	1.50	1			
4	16.25	0.75	1			
5	18.00	1.75	0.5			
6	18.00	1.00	1			
7	18.25	1.75	1			
8	18.25	1.75	1			
9	18.25	1.50	1			
10	18.75	1.50	0			
11	19.25	1.75	2		NA	
12	19.50	2.00	1.5			
13	20.25	1.75	1			
14	20.50	1.50	1			
15	20.75	1.50	1			
16	20.75	1.75	2.5			
17	21.25	1.00	2			
18	24.25	1.75	2			
19	24.50	1.25	2			
20	27.75	1.75	1.5			
Minimum	10.75	0.50	0.00			
Mean	19.33	1.44	1.25			
Maximum	27.75	2.00	2.50		NA	
SD	3.63	0.42	0.60			
Coef. var.	18.76	29.25	47.68			

Dimensions of ectosomal spicules [μm], N = 20 spicules					
Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	305.50	12.25	24.94	15.25	17.50
2	315.00	14.50	21.72	16.50	15.75
3	315.00	12.25	25.71	12.75	13.50
4	324.50	17.00	19.09	18.00	17.75
5	332.00	14.25	23.30	15.50	17.50
6	336.50	15.50	21.71	17.25	17.50
7	337.00	13.25	25.43	14.75	16.50
8	342.50	12.25	27.96	15.00	16.50
9	343.50	15.25	22.52	18.25	18.25
10	343.50	12.75	26.94	15.25	17.25
11	346.50	14.25	24.32	15.50	15.25
12	350.00	14.25	24.56	16.25	16.00
13	350.00	14.00	25.00	16.00	16.00
14	352.00	12.75	27.61	15.50	18.00
15	356.50	13.75	25.93	16.50	16.25
16	357.50	14.25	25.09	16.50	18.25
17	361.50	13.50	26.78	16.50	17.00
18	367.50	17.00	21.62	17.75	18.00
19	377.50	15.75	23.97	17.00	18.25
20	403.50	13.75	29.35	16.00	18.25
Minimum	305.50	12.25	19.09	12.75	13.50
Mean	345.88	14.13	24.68	16.10	16.96
Maximum	403.50	17.00	29.35	18.25	18.25
SD	22.63	1.42	2.51	1.27	1.25
Coef. var.	6.54	10.05	10.16	7.88	7.35
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	187.50	7.75	24.19	9.75	9.00
2	214.50	9.00	23.83	12.00	12.75
3	228.50	11.25	20.31	13.25	14.25
4	230.00	10.25	22.44	13.00	13.25
5	235.50	11.75	20.04	13.50	14.25
6	240.50	11.75	20.47	15.25	14.75
7	241.50	10.50	23.00	13.50	13.75
8	247.50	10.50	23.57	13.75	15.75
9	253.50	10.50	24.14	14.00	14.25
10	260.50	14.00	18.61	16.25	17.00
11	265.00	10.25	25.85	14.00	15.25
12	270.50	11.75	23.02	12.75	12.75
13	276.00	10.75	25.67	13.00	15.25
14	283.00	11.00	25.73	12.75	13.50
15	286.50	12.25	23.39	15.25	15.75
16	295.00	13.00	22.69	15.25	15.50
17	298.00	13.25	22.49	15.00	16.00
18	299.00	14.25	20.98	16.50	17.75
19	300.50	15.25	19.70	16.25	17.25
20	303.00	19.50	15.54	19.50	18.25
Minimum	187.50	7.75	15.54	9.75	9.00
Mean	260.80	11.93	22.28	14.23	14.81
Maximum	303.00	19.50	25.85	19.50	18.25
SD	32.47	2.53	2.61	2.05	2.10
Coef. var.	12.45	21.22	11.71	14.39	14.17

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	15.75	0.50	2			
2	16.00	1.00	1			
3	16.75	0.25	3			
4	18.00	1.00	2			
5	18.50	1.00	0.5			
6	19.25	2.00	1			
7	19.75	1.75	0.5			
8	20.00	1.00	3			
9	20.25	1.25	2			
10	21.00	1.25	2			
11	21.25	1.50	1		NA	
12	21.75	0.75	3			
13	22.00	1.75	1			
14	22.50	1.00	2			
15	22.75	1.50	0.5			
16	23.00	1.50	2			
17	24.25	0.75	3			
18	24.50	1.75	1.5			
19	26.75	1.25	2			
20	30.00	1.25	0.5			
Minimum	15.75	0.25	0.50			
Mean	21.20	1.20	1.68			
Maximum	30.00	2.00	3.00		NA	
SD	3.55	0.45	0.89			
Coef. var.	16.73	37.39	53.29			

S4.3: *Cliona thomasi* sp. nov. **paratype 2** – NIO 1003 (= MGB 6), Malvan Marine Sanctuary, West India

Spicule dimensions [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	300.00	12.25	24.49	15.25	13.25
2	303.50	11.00	27.59	13.25	13.25
3	311.50	12.50	24.92	15.25	14.00
4	311.50	14.00	22.25	15.50	14.50
5	318.50	15.25	20.89	16.75	15.75
6	331.00	14.25	23.23	16.00	14.75
7	334.50	13.50	24.78	15.25	13.50
8	338.50	11.50	29.43	15.50	14.25
9	340.50	16.75	20.33	17.50	16.75
10	346.50	17.00	20.38	18.00	16.00
11	352.00	14.75	23.86	18.00	16.25
12	353.00	12.25	28.82	14.25	13.75
13	354.00	13.25	26.72	15.50	15.75
14	358.50	12.25	29.27	16.50	16.25
15	362.00	12.50	28.96	15.50	15.00
16	365.00	13.50	27.04	16.75	15.50
17	370.00	14.50	25.52	16.50	18.00
18	376.50	13.75	27.38	16.00	16.50
19	381.50	13.25	28.79	15.50	13.25
20	388.00	14.25	27.23	16.25	16.50

Minimum	300.00	11.00	20.33	13.25	13.25	
Mean	344.83	13.61	25.59	15.95	15.14	
Maximum	388.00	17.00	29.43	18.00	18.00	
SD	26.09	1.57	3.01	1.16	1.39	
Coef. var.	7.56	11.52	11.77	7.26	9.16	
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height	
1	240.00	13.25	18.11	14.75	13.25	
2	247.50	10.75	23.02	14.00	13.00	
3	257.50	14.00	18.39	17.50	16.00	
4	265.50	12.00	22.13	15.50	14.25	
5	269.50	12.75	21.14	14.75	13.25	
6	272.50	15.25	17.87	18.75	15.75	
7	275.00	13.25	20.75	17.00	15.75	
8	275.00	14.00	19.64	15.50	16.25	
9	276.00	12.25	22.53	15.75	13.50	
10	276.50	13.25	20.87	16.00	14.75	
11	279.00	13.00	21.46	16.75	15.50	
12	280.50	12.75	22.00	17.75	16.00	
13	283.00	12.75	22.20	15.25	13.25	
14	285.50	15.25	18.72	18.00	15.50	
15	287.50	15.75	18.25	17.25	15.50	
16	288.00	12.75	22.59	16.50	15.50	
17	293.00	12.75	22.98	15.00	14.50	
18	293.50	15.00	19.57	18.25	16.75	
19	299.00	16.25	18.40	20.25	17.75	
20	306.00	14.00	21.86	17.00	15.75	
Minimum	240.00	10.75	17.87	14.00	13.00	
Mean	277.50	13.55	20.62	16.58	15.09	
Maximum	306.00	16.25	23.02	20.25	17.75	
SD	16.29	1.38	1.82	1.57	1.32	
Coef. var.	5.87	10.20	8.84	9.49	8.74	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	13.50	0.50	1			
2	14.25	0.75	1			
3	14.25	0.75	0.5			
4	14.50	0.75	2			
5	14.75	0.75	1			
6	15.00	0.50	1			
7	15.50	0.50	3			
8	15.50	1.00	2			
9	15.50	0.50	1			
10	15.75	0.75	1			
11	16.50	1.00	1		NA	
12	16.50	1.00	1			
13	16.75	1.00	1			
14	17.75	0.75	1.5			
15	18.25	1.00	1			
16	18.25	0.75	2			
17	19.25	0.50	2			
18	20.00	0.75	2			
19	22.50	0.50	2			
20	23.25	0.75	0			

Minimum	13.50	0.50	0.00	NA
Mean	16.88	0.74	1.35	
Maximum	23.25	1.00	3.00	
SD	2.70	0.19	0.69	
Coef. var.	15.99	25.73	51.12	

S4.4: *Cliona thomasi* sp. nov. **paratype 3 – NIO 1004** (= MGB 8), Malvan Marine Sanctuary, West India

Spicule dimensions [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	303.00	12.50	24.24	14.25	14.25
2	303.00	15.00	20.20	15.75	17.75
3	312.50	13.00	24.04	16.75	16.50
4	313.50	13.00	24.12	15.50	15.25
5	318.50	15.00	21.23	16.75	16.25
6	320.50	12.50	25.64	14.75	14.75
7	321.00	14.25	22.53	16.25	16.50
8	328.50	17.00	19.32	17.25	16.25
9	336.50	15.25	22.07	16.50	16.00
10	341.00	14.25	23.93	16.75	17.75
11	341.00	15.25	22.36	14.50	15.00
12	346.50	15.25	22.72	15.75	15.25
13	350.50	13.25	26.45	15.50	17.75
14	351.00	12.50	28.08	14.25	15.00
15	356.00	14.00	25.43	14.00	19.50
16	359.50	15.75	22.83	16.75	17.00
17	361.50	16.75	21.58	17.00	16.25
18	363.50	14.00	25.96	15.50	15.00
19	371.50	13.00	28.58	14.25	15.00
20	373.00	16.50	22.61	17.75	16.75
Minimum	303.00	12.50	19.32	14.00	14.25
Mean	338.60	14.40	23.70	15.79	16.19
Maximum	373.00	17.00	28.58	17.75	19.50
SD	22.38	1.45	2.45	1.15	1.31
Coef. var.	6.61	10.05	10.33	7.29	8.11

Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	201.50	9.25	21.78	13.00	11.75
2	247.50	11.75	21.06	12.00	13.25
3	255.50	13.50	18.93	14.00	14.25
4	262.00	12.00	21.83	14.25	15.00
5	263.50	12.50	21.08	15.75	15.50
6	264.00	13.75	19.20	14.75	14.50
7	264.00	12.50	21.12	15.50	13.75
8	266.00	13.00	20.46	15.00	14.25
9	269.00	12.75	21.10	14.50	13.00
10	270.50	15.25	17.74	17.75	14.75
11	276.00	11.75	23.49	13.25	14.50
12	279.50	13.50	20.70	16.75	16.00
13	281.00	13.25	21.21	16.50	16.50
14	286.50	14.00	20.46	17.50	16.00
15	289.00	14.25	20.28	15.75	16.00
16	290.50	14.50	20.03	16.75	15.75
17	293.00	13.00	22.54	15.75	15.00

18	293.50	12.75	23.02	14.00	14.25	
19	295.50	14.75	20.03	17.50	18.00	
20	300.50	15.00	20.03	15.00	15.50	
Minimum	201.50	9.25	17.74	12.00	11.75	
Mean	272.43	13.15	20.81	15.26	14.88	
Maximum	300.50	15.25	23.49	17.75	18.00	
SD	22.30	1.38	1.37	1.59	1.38	
Coef. var.	8.19	10.53	6.56	10.41	9.31	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	12.50	1.50	1			
2	13.25	1.00	1			
3	14.25	0.75	2			
4	15.00	1.25	1			
5	15.75	1.00	1			
6	15.75	0.50	1			
7	15.75	0.75	1			
8	15.75	0.75	1			
9	16.50	1.50	1			
10	16.75	1.00	1			
11	16.75	0.75	1.5		NA	
12	16.75	0.50	2			
13	17.50	0.50	1			
14	17.75	1.00	1			
15	18.00	0.75	1.5			
16	18.25	1.00	2			
17	18.25	0.50	3			
18	18.25	0.50	1			
19	19.00	1.00	2			
20	20.50	1.00	2			
Minimum	12.50	0.50	1.00			
Mean	16.61	0.88	1.40			
Maximum	20.50	1.50	3.00		NA	
SD	1.95	0.31	0.58			
Coef. var.	11.74	35.30	41.13			

S4.5: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P1** (= MGB 1), Malvan Marine Sanctuary, West India

Spicule dimensions [μm], N = 20 spicules, except for spirasters, where N = 2

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	300.50	14.75	20.37	16.00	14.00
2	343.50	15.00	22.90	16.75	18.00
3	347.00	14.75	23.53	17.75	17.00
4	347.50	12.50	27.80	15.75	15.75
5	356.00	12.50	28.48	16.00	15.75
6	356.00	15.50	22.97	17.50	17.25
7	356.50	12.50	28.52	15.00	15.00
8	357.00	12.50	28.56	17.75	17.75
9	364.00	13.75	26.47	15.75	16.00
10	365.00	16.00	22.81	16.25	16.75
11	367.50	13.25	27.74	16.50	16.50
12	370.00	12.50	29.60	15.75	19.25
13	371.50	16.25	22.86	18.25	18.00
14	374.00	16.50	22.67	18.00	16.75
15	374.50	17.00	22.03	18.00	18.50

16	379.00	17.50	21.66	18.25	18.25
17	381.50	15.00	25.43	16.75	16.00
18	391.00	14.25	27.44	15.75	17.50
19	399.00	15.00	26.60	17.75	17.75
20	403.50	16.25	24.83	16.25	17.50
Minimum	300.50	12.50	20.37	15.00	14.00
Mean	365.23	14.66	25.16	16.79	16.96
Maximum	403.50	17.50	29.60	18.25	19.25
SD	22.45	1.64	2.82	1.02	1.28
Coef. var.	6.15	11.19	11.20	6.10	7.53

Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	219.50	10.50	20.90	12.75	13.50
2	226.50	10.75	21.07	13.50	14.25
3	265.50	12.50	21.24	15.25	15.25
4	267.50	13.00	20.58	16.00	15.75
5	268.00	11.75	22.81	13.75	13.50
6	284.00	10.75	26.42	13.25	13.25
7	288.00	10.50	27.43	13.25	13.00
8	291.50	12.75	22.86	15.25	15.50
9	291.50	12.75	22.86	16.25	16.75
10	292.00	14.75	19.80	16.00	17.50
11	302.50	12.75	23.73	18.00	14.50
12	305.00	15.50	19.68	17.75	15.25
Minimum	219.50	10.50	19.68	12.75	13.00
Mean	275.13	12.35	22.45	15.08	14.83
Maximum	305.00	15.50	27.43	18.00	17.50
SD	27.58	1.62	2.46	1.79	1.42
Coef. var.	10.02	13.13	10.96	11.85	9.60

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	16.00	1.00	1		NA	
2	16.25	1.00	0			
Minimum	16.00	1.00	0.00			
Mean	16.13	1.00	0.50		NA	
Maximum	16.25	1.00	1.00			
SD	0.18	0.00	0.71			
Coef. var.	1.10	0.00	141.42			

S4.6: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P3** (= MGB 7), Malvan Marine Sanctuary, West India

Spicule dimensions [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	310.00	15.75	19.68	14.75	14.50
2	330.00	13.25	24.91	15.50	15.00
3	331.00	15.50	21.35	16.75	15.75
4	333.00	17.50	19.03	18.00	15.25
5	333.50	13.00	25.65	15.25	15.00
6	336.00	12.75	26.35	15.25	15.75
7	339.00	14.50	23.38	16.25	15.00
8	341.00	13.25	25.74	16.00	13.50
9	343.00	12.50	27.44	15.50	15.50
10	344.50	13.50	25.52	17.00	13.50
11	349.00	13.25	26.34	15.25	15.75

12	353.50	16.75	21.10	17.50	16.25	
13	355.50	12.00	29.63	15.00	13.75	
14	356.00	15.75	22.60	17.00	16.00	
15	356.00	18.00	19.78	18.25	15.75	
16	358.50	15.75	22.76	15.50	15.00	
17	361.00	14.25	25.33	15.50	15.00	
18	367.50	14.00	26.25	16.75	17.00	
19	376.50	14.75	25.53	15.75	15.25	
20	386.00	13.25	29.13	15.75	18.25	
Minimum	310.00	12.00	19.03	14.75	13.50	
Mean	348.03	14.46	24.38	16.13	15.34	
Maximum	386.00	18.00	29.63	18.25	18.25	
SD	17.67	1.70	3.05	1.01	1.12	
Coef. var.	5.08	11.78	12.50	6.29	7.29	
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height	
1	219.00	11.50	19.04	14.25	13.75	
2	222.50	11.50	19.35	14.25	14.00	
3	233.00	12.50	18.64	15.50	13.50	
4	249.00	13.25	18.79	15.75	15.00	
5	251.00	12.00	20.92	14.75	13.75	
6	251.50	12.75	19.73	14.25	13.75	
7	255.00	15.25	16.72	17.50	15.25	
8	258.50	15.00	17.23	16.25	16.25	
9	259.00	11.50	22.52	14.25	15.50	
10	262.00	11.75	22.30	13.25	14.50	
11	265.00	14.25	18.60	15.75	15.50	
12	273.50	12.50	21.88	15.75	13.50	
13	276.50	14.75	18.75	17.25	15.75	
14	279.00	12.75	21.88	15.25	15.25	
15	280.00	12.75	21.96	14.00	13.25	
16	284.00	12.75	22.27	17.25	15.50	
17	286.50	15.75	18.19	18.00	16.25	
18	287.50	13.00	22.12	15.50	14.00	
19	291.50	15.25	19.11	18.25	16.00	
20	293.00	16.25	18.03	22.50	17.75	
Minimum	219.00	11.50	16.72	13.25	13.25	
Mean	263.85	13.35	19.90	15.98	14.90	
Maximum	293.00	16.25	22.52	22.50	17.75	
SD	21.98	1.53	1.88	2.09	1.20	
Coef. var.	8.33	11.47	9.47	13.11	8.06	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	13.25	1.00	1			
2	14.25	1.50	0			
3	15.00	0.75	1			
4	15.00	0.75	2			
5	15.50	0.75	3			
6	16.25	0.50	1			
7	16.25	0.75	2			
8	17.50	0.75	2		NA	
9	17.75	0.75	2			
10	17.75	0.50	2			
11	18.00	0.75	1			
12	18.25	0.75	3			
13	18.25	1.00	3			
14	19.00	0.75	2			

15	19.50	0.75	2
16	20.75	0.75	3
17	21.00	0.75	2.5
18	21.25	1.00	2
19	23.00	1.00	2.5
20	23.75	1.00	3
Minimum	13.25	0.50	0.00
Mean	18.06	0.83	2.00
Maximum	23.75	1.50	3.00
SD	2.86	0.22	0.84
Coef. var.	15.86	26.20	42.15

NA

S4.7: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P5** (= MGB 9), Malvan Marine Sanctuary, West India

Spicule dimensions [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	305.50	12.75	23.96	12.25	14.25
2	310.00	13.25	23.40	17.25	16.75
3	311.00	13.75	22.62	15.00	15.75
4	320.00	15.50	20.65	18.00	16.75
5	329.00	15.50	21.23	18.25	16.75
6	332.00	15.00	22.13	14.75	15.75
7	340.50	17.00	20.03	18.75	18.50
8	344.00	16.75	20.54	18.25	17.75
9	349.00	14.00	24.93	15.50	17.50
10	351.50	13.75	25.56	15.50	17.50
11	352.50	12.75	27.65	13.75	13.00
12	356.50	14.25	25.02	14.25	16.00
13	362.00	13.00	27.85	15.75	15.00
14	365.50	18.00	20.31	20.00	18.50
15	366.50	17.75	20.65	19.25	18.25
16	367.50	14.75	24.92	15.25	15.75
17	368.50	15.50	23.77	17.00	16.25
18	368.50	15.25	24.16	16.00	17.75
19	368.50	13.50	27.30	16.25	16.50
20	375.00	12.75	29.41	13.00	13.75

Minimum	305.50	12.75	20.03	12.25	13.00
Mean	347.18	14.74	23.80	16.20	16.40
Maximum	375.00	18.00	29.41	20.00	18.50
SD	22.24	1.66	2.81	2.11	1.54
Coef. var.	6.41	11.26	11.81	13.05	9.42

Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	188.50	7.75	24.32	9.50	11.25
2	193.50	8.75	22.11	11.75	11.00
3	210.00	10.50	20.00	12.00	10.75
4	218.50	9.75	22.41	12.50	11.75
5	221.00	12.50	17.68	13.75	13.25
6	240.50	12.00	20.04	13.25	13.00
7	247.00	12.00	20.58	15.25	14.00
8	251.50	12.25	20.53	13.25	13.00
9	251.50	11.75	21.40	13.50	14.25
10	254.00	13.25	19.17	15.75	13.50
11	265.00	12.50	21.20	13.25	15.00
12	266.00	11.75	22.64	13.25	12.00

13	268.00	13.00	20.62	15.00	15.00
14	278.50	12.25	22.73	13.25	14.75
15	278.50	13.50	20.63	15.75	14.50
16	278.50	14.00	19.89	17.00	15.75
17	278.50	11.75	23.70	12.75	13.25
18	280.00	12.50	22.40	12.25	12.00
19	284.00	15.00	18.93	15.75	18.00
20	293.50	14.25	20.60	17.25	16.25
Minimum	188.50	7.75	17.68	9.50	10.75
Mean	252.33	12.05	21.08	13.80	13.61
Maximum	293.50	15.00	24.32	17.25	18.00
SD	31.14	1.77	1.65	1.92	1.89
Coef. var.	12.34	14.73	7.84	13.89	13.85

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	13.3	1.0	1			
2	13.8	1.3	1			
3	14.3	1.0	1			
4	14.5	1.5	0			
5	15.0	1.0	1			
6	15.0	1.3	1			
7	15.3	1.3	2			
8	15.3	1.5	1			
9	15.5	0.8	2			
10	15.5	0.8	1			
11	15.8	0.8	1		NA	
12	16.3	0.8	2			
13	16.8	1.3	2			
14	17.8	1.0	1			
15	17.8	1.0	1			
16	18.0	1.0	1			
17	18.3	1.5	2			
18	19.3	1.5	1			
19	21.5	2.0	0			
20	21.8	1.0	2			
Minimum	13.25	0.75	0.00			
Mean	16.51	1.15	1.20			
Maximum	21.75	2.00	2.00		NA	
SD	2.36	0.33	0.62			
Coef. var.	14.31	28.56	51.30			

S4.8: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P6** (= MGB 10), Malvan Marine Sanctuary, West India

Spicule dimensions [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	308.50	16.75	18.42	19.00	15.50
2	313.50	12.50	25.08	12.00	13.25
3	323.50	15.75	20.54	16.00	16.50
4	330.00	15.75	20.95	14.50	15.50
5	335.00	15.25	21.97	14.75	14.50
6	337.00	16.75	20.12	15.75	15.75
7	338.00	15.75	21.46	19.50	18.00
8	338.50	17.25	19.62	18.25	17.75
9	338.50	16.75	20.21	15.75	19.75
10	343.50	14.00	24.54	13.50	15.00

11	343.50	14.75	23.29	14.50	16.00	
12	353.50	13.25	26.68	16.75	16.75	
13	357.50	14.75	24.24	14.25	14.25	
14	358.00	14.25	25.12	15.50	18.00	
15	365.50	15.25	23.97	15.50	14.50	
16	366.50	15.75	23.27	16.50	17.50	
17	367.50	15.75	23.33	16.00	18.00	
18	371.50	12.75	29.14	13.50	13.00	
19	380.00	14.25	26.67	14.50	16.25	
20	386.00	14.50	26.62	14.25	15.50	
Minimum	308.50	12.50	18.42	12.00	13.00	
Mean	347.78	15.09	23.26	15.51	16.06	
Maximum	386.00	17.25	29.14	19.50	19.75	
SD	21.22	1.34	2.83	1.86	1.75	
Coef. var.	6.10	8.85	12.18	12.01	10.89	
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height	
1	231.00	11.75	19.66	12.00	12.00	
2	247.00	11.00	22.45	13.00	13.25	
3	247.50	11.00	22.50	12.75	13.75	
4	250.50	10.25	24.44	12.25	14.00	
5	251.50	11.75	21.40	12.25	11.50	
6	255.00	11.75	21.70	14.25	14.50	
7	265.00	12.50	21.20	13.00	12.25	
8	265.00	11.75	22.55	13.25	14.25	
9	271.50	13.25	20.49	14.50	14.25	
10	279.00	12.50	22.32	14.25	14.25	
11	281.50	13.00	21.65	15.75	16.25	
12	288.50	17.00	16.97	19.25	17.50	
13	290.50	13.50	21.52	16.00	16.75	
14	292.00	13.50	21.63	15.75	15.25	
15	292.50	12.75	22.94	15.50	14.25	
16	295.00	16.00	18.44	18.00	17.50	
17	295.50	14.75	20.03	15.25	14.25	
18	297.50	14.25	20.88	15.75	14.75	
19	298.00	13.25	22.49	16.00	14.25	
20	301.00	15.25	19.74	19.25	16.00	
Minimum	231.00	10.25	16.97	12.00	11.50	
Mean	274.75	13.04	21.25	14.90	14.54	
Maximum	301.00	17.00	24.44	19.25	17.50	
SD	21.58	1.74	1.69	2.18	1.65	
Coef. var.	7.85	13.36	7.95	14.65	11.38	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	8.50	0.75	1			
2	10.50	0.50	1			
3	11.00	0.75	1			
4	11.50	0.50	1			
5	11.75	0.50	1			
6	12.50	0.50	1			
7	12.50	0.75	1		NA	
8	13.25	0.75	1.5			
9	13.50	0.75	1			
10	15.25	1.00	1			
11	15.75	1.00	1			
12	15.75	0.75	2			
13	16.25	0.50	2			

14	17.00	1.50	1
15	17.75	0.75	2
16	18.25	1.00	1
17	18.25	1.00	2
18	19.25	0.75	2
19	20.75	1.00	2
20	21.75	0.75	4
Minimum	8.50	0.50	1.00
Mean	15.05	0.79	1.48
Maximum	21.75	1.50	4.00
SD	3.64	0.25	0.75
Coef. var.	24.16	31.37	50.97

S4.9: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P2** (= MGB 21), Malvan Marine Sanctuary, West India; somewhat unusual for the occurrence of abnormal spirasters

Dimensions of choanosomal spicules [μm], N = 20 spicules					
Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	306.50	14.25	21.51	14.75	14.25
2	323.00	13.00	24.85	16.00	16.50
3	324.00	13.75	23.56	14.00	14.25
4	325.50	15.50	21.00	15.50	16.25
5	326.50	13.75	23.75	15.25	14.75
6	328.50	15.75	20.86	17.50	16.25
7	332.50	15.50	21.45	19.00	17.25
8	344.00	15.00	22.93	15.75	15.75
9	344.00	14.00	24.57	13.00	15.25
10	345.50	13.00	26.58	15.75	15.25
11	346.50	12.25	28.29	16.00	15.50
12	353.00	17.50	20.17	18.00	18.00
13	355.50	16.25	21.88	18.75	19.00
14	356.50	14.25	25.02	16.00	14.75
15	368.50	17.00	21.68	18.50	18.25
16	370.00	16.25	22.77	19.50	18.25
17	374.00	16.00	23.38	20.00	20.50
18	385.00	15.50	24.84	17.50	17.25
19	401.50	15.50	25.90	19.50	18.25
20	406.00	15.50	26.19	18.75	19.00
Minimum	306.50	12.25	20.17	13.00	14.25
Mean	350.83	14.98	23.56	16.95	16.73
Maximum	406.00	17.50	28.29	20.00	20.50
SD	26.87	1.40	2.20	2.01	1.79
Coef. var.	7.66	9.32	9.33	11.86	10.72

Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	193.00	7.50	25.73	11.25	8.00
2	201.50	10.00	20.15	12.75	14.50
3	223.00	9.25	24.11	11.75	13.00
4	227.50	10.50	21.67	13.50	14.75
5	236.00	11.50	20.52	14.00	13.50
6	253.50	11.25	22.53	15.25	14.75
7	255.50	12.25	20.86	15.25	15.00
8	266.50	10.25	26.00	13.25	14.25
9	271.50	13.25	20.49	15.75	15.25
10	274.00	10.50	26.10	12.75	12.75
11	279.50	13.25	21.09	17.50	17.00

12	281.50	14.25	19.75	18.25	16.75
13	282.50	12.25	23.06	12.50	11.25
14	286.00	12.50	22.88	15.75	14.25
15	288.50	12.00	24.04	16.00	15.50
16	289.00	12.25	23.59	17.75	18.00
17	290.00	15.25	19.02	16.50	13.75
18	290.50	11.75	24.72	15.50	16.75
19	295.00	14.00	21.07	15.75	16.75
20	299.50	14.00	21.39	16.00	17.25

Minimum	193.00	7.50	19.02	11.25	8.00
Mean	264.20	11.89	22.44	14.85	14.65
Maximum	299.50	15.25	26.10	18.25	18.00
SD	31.86	1.88	2.16	2.02	2.32
Coef. var.	12.06	15.82	9.64	13.60	15.86

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	14.00	1.25	1	14.75	2.00	1
2	15.00	2.75	1.5	16.00	2.00	1
3	15.50	0.75	1	16.00	2.00	0
4	16.00	1.50	1	17.50	2.25	0.5
5	16.00	1.75	1	18.00	2.25	1
6	16.25	1.00	1	18.75	1.50	1
7	16.25	1.50	1	18.75	1.75	3
8	16.25	2.00	1	18.75	2.00	1.5
9	16.50	1.75	1	20.50	1.50	3
10	17.50	1.75	1	21.75	2.00	3
11	17.75	1.75	1	21.75	1.75	3
12	18.00	1.75	1	22.25	2.50	0.5
13	19.50	2.00	1	22.75	1.50	1
14	19.50	2.00	1	22.75	2.50	3
15	20.00	1.75	1	22.75	1.75	0.5
16	20.25	1.75	1.5	22.75	2.25	3
17	20.25	1.75	1	24.75	2.50	3
18	20.75	1.75	1	27.50	2.00	3
19	22.75	1.75	3	28.25	2.25	3
20	26.00	1.25	1	28.25	1.75	3

Minimum	14.00	0.75	1.00	14.75	1.50	0.00
Mean	18.20	1.68	1.15	21.23	2.00	1.90
Maximum	26.00	2.75	3.00	28.25	2.50	3.00
SD	2.93	0.41	0.46	3.98	0.32	1.17
Coef. var.	16.09	24.74	40.15	18.76	16.22	61.33

Dimensions of choanosomal spicules [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	307.50	12.75	24.12	14.25	14.75
2	316.00	12.75	24.78	15.50	16.00
3	318.50	12.25	26.00	13.50	13.00
4	318.50	15.25	20.89	18.00	17.50
5	326.50	14.00	23.32	17.25	17.50
6	330.00	15.50	21.29	19.75	18.25
7	330.50	13.25	24.94	15.25	16.50
8	330.50	15.25	21.67	16.00	14.75
9	331.00	17.00	19.47	15.75	17.50
10	346.00	15.25	22.69	18.25	18.00
11	354.00	14.75	24.00	18.50	16.75
12	358.00	13.50	26.52	17.00	15.75

13	366.50	13.25	27.66	17.00	16.75
14	369.00	17.00	21.71	18.25	17.50
15	376.50	15.25	24.69	18.50	19.00
16	379.50	13.75	27.60	16.25	15.75
17	384.00	14.25	26.95	17.25	18.50
18	386.50	15.75	24.54	19.25	18.00
19	394.00	19.75	19.95	19.75	18.50
20	426.50	15.75	27.08	20.25	20.00
Minimum	307.50	12.25	19.47	13.50	13.00
Mean	352.48	14.81	23.99	17.28	17.01
Maximum	426.50	19.75	27.66	20.25	20.00
SD	32.02	1.79	2.55	1.87	1.67
Coef. var.	9.08	12.07	10.65	10.81	9.79

Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	223.50	9.00	24.83	12.00	12.00
2	232.00	10.00	23.20	13.00	12.50
3	240.50	11.00	21.86	13.00	14.75
4	241.00	12.00	20.08	14.75	14.50
5	245.50	12.50	19.64	17.00	15.75
6	253.50	10.25	24.73	13.50	13.75
7	266.00	10.50	25.33	13.25	15.25
8	270.50	10.75	25.16	13.25	14.25
9	271.00	13.50	20.07	17.50	18.00
10	275.00	13.25	20.75	18.25	16.75
11	275.50	14.25	19.33	16.75	16.00
12	276.50	12.50	22.12	15.25	15.50
13	277.00	12.75	21.73	14.00	15.50
14	278.00	15.50	17.94	19.25	17.50
15	287.00	12.75	22.51	17.75	16.50
16	288.50	11.50	25.09	15.00	15.00
17	291.00	14.75	19.73	18.75	17.50
18	295.50	12.75	23.18	16.00	15.75
19	297.00	13.25	22.42	16.50	15.00
20	299.50	14.75	20.31	18.00	16.25
Minimum	223.50	9.00	17.94	12.00	12.00
Mean	269.20	12.38	22.00	15.64	15.40
Maximum	299.50	15.50	25.33	19.25	18.00
SD	22.63	1.75	2.24	2.23	1.55
Coef. var.	8.40	14.16	10.20	14.24	10.05

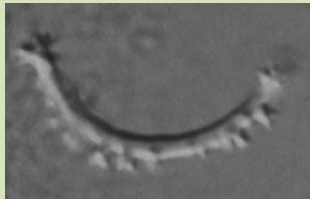

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	13.25	1.75	0	13.25	2.75	2
2	13.75	1.75	1	13.75	2.00	1
3	15.00	1.75	1	16.00	1.75	1
4	15.50	1.75	1	16.50	2.25	1
5	15.75	1.75	1	18.00	2.75	0.5
6	16.00	1.50	1	18.00	2.25	0.5
7	16.00	1.00	1	18.25	2.00	1
8	16.25	1.50	1.0	18.25	1.75	0.5
9	16.50	1.50	1	19.25	2.75	1
10	16.50	2.25	1	20.25	2.25	1
11	17.50	2.50	1.5	20.75	2.00	0.5
12	17.50	1.50	1	22.50	2.25	1.5
13	18.75	1.75	2	22.50	2.25	1
14	19.25	1.00	2	22.75	2.50	2.5
15	20.00	1.50	1	23.00	2.00	0.5

16	20.00	1.75	1	24.00	1.75	3
17	21.75	1.75	1.5	25.50	1.75	3
18	23.25	1.75	1	28.25	2.25	2
19	23.50	1.75	1.5	28.25	1.75	2.5
20	25.75	1.75	1	31.25	2.50	3
Minimum	13.25	1.00	0.00	13.25	1.75	0.50
Mean	18.09	1.68	1.13	21.01	2.18	1.45
Maximum	25.75	2.50	2.00	31.25	2.75	3.00
SD	3.39	0.34	0.43	4.84	0.35	0.92
Coef. var.	18.77	20.02	37.81	23.05	15.87	63.19

S4.10: *Cliona thomasi* sp. nov. additional material **NIO/BOD/P4** (= MGB 23), Malvan Marine Sanctuary, West India; somewhat unusual for the occurrence of abnormal spirasters and comparatively long and slimmer than usual tylostyles of the long type

Dimensions of choanosomal spicules [μm], N = 20 spicules					
Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	307.00	12.75	24.08	16.25	14.00
2	316.00	15.00	21.07	15.50	14.50
3	330.50	14.25	23.19	15.75	16.00
4	351.00	16.25	21.60	17.75	17.50
5	363.50	15.25	23.84	16.75	16.75
6	377.00	15.00	25.13	17.25	18.50
7	378.00	17.50	21.60	15.50	17.00
8	380.00	17.75	21.41	15.50	17.00
9	386.00	15.00	25.73	15.50	15.50
10	389.00	18.75	20.75	18.50	17.00
11	394.00	18.00	21.89	18.00	18.00
12	395.00	16.50	23.94	16.75	15.25
13	404.50	18.25	22.16	18.50	17.00
14	406.50	18.00	22.58	18.00	16.75
15	410.50	16.00	25.66	17.00	17.00
16	411.00	18.75	21.92	17.75	17.75
17	416.50	16.75	24.87	19.25	17.75
18	418.50	17.00	24.62	16.50	16.50
19	420.00	17.00	24.71	15.75	17.75
20	426.00	17.00	25.06	18.00	18.00
Minimum	307.00	12.75	20.75	15.50	14.00
Mean	384.03	16.54	23.29	16.99	16.78
Maximum	426.00	18.75	25.73	19.25	18.50
SD	34.75	1.60	1.65	1.19	1.19
Coef. var.	9.05	9.69	7.10	6.99	7.12
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	316.00	15.00	21.07	15.50	14.50
2	225.00	11.75	19.15	15.25	13.50
3	256.50	12.25	20.94	15.25	14.00
4	278.00	13.25	20.98	15.50	15.75
5	298.00	13.75	21.67	15.50	14.25
6	322.50	17.50	18.43	17.75	16.50
7	298.50	16.00	18.66	17.75	18.75
8	276.00	12.50	22.08	14.50	13.50
9	283.00	14.25	19.86	14.25	14.00
10	280.50	10.75	26.09	14.00	11.75
11	322.00	14.25	22.60	16.50	17.50
12	270.00	13.00	20.77	16.50	14.00

13	283.50	14.25	19.89	16.75	16.00
14	278.00	10.50	26.48	13.50	13.25
15	304.00	13.25	22.94	17.25	15.00
16	270.00	13.50	20.00	17.50	17.25
17	242.50	10.75	22.56	12.75	14.50
18	261.00	12.50	20.88	15.50	14.25
19	303.50	14.50	20.93	15.50	15.25
20	271.50	10.25	26.49	13.00	12.75
Minimum	225.00	10.25	18.43	12.75	11.75
Mean	282.00	13.19	21.62	15.50	14.81
Maximum	322.50	17.50	26.49	17.75	18.75
SD	25.38	1.88	2.38	1.51	1.72
Coef. var.	9.00	14.24	11.01	9.76	11.63

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
E.g.						
1	13.00	0.50	1	17.25	1.00	2.0
2	15.00	1.00	1.5	18.00	2.00	1.5
3	15.25	1.00	1	18.00	1.75	1.0
4	15.50	1.25	1.5	18.25	2.75	0.0
5	15.50	1.75	1.0	19.25	1.75	2.0
6	15.75	1.00	1	20.25	1.50	3.0
7	16.00	1.00	2	21.75	2.00	2.0
8	16.25	1.50	1	22.00	1.75	3.0
9	16.50	1.25	1.0	23.50	1.75	0.5
10	16.50	0.75	1.0	23.75	1.50	3.0
11	16.50	0.75	1	24.25	1.75	2.5
12	17.00	1.25	1	24.50	2.00	1.5
13	17.00	1.50	1	25.00	1.75	3.0
14	17.75	1.75	1	25.25	2.00	3.0
15	18.00	1.75	1.0	25.50	2.00	0.0
16	18.00	1.50	1	26.25	1.50	0.5
17	18.25	1.00	1.0	26.75	2.00	3.0
18	18.50	1.75	1	29.00	1.50	3.0
19	19.00	1.75	1.0	33.00	1.75	2.5
20	20.00	0.50	3	36.00	1.25	3.0
Minimum	13.00	0.50	1.00	17.25	1.00	0.00
Mean	17.06	1.21	1.24	23.88	1.76	2.00
Maximum	23.00	1.75	3.00	36.00	2.75	3.00
SD	2.08	0.41	0.52	4.94	0.36	1.09
Coef. var.	12.21	34.01	41.62	20.70	20.31	54.41

Dimensions of choanosomal spicules [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	314.00	13.50	23.26	15.50	14.75
2	318.00	13.50	23.56	15.50	15.75
3	321.50	12.00	26.79	15.00	14.75
4	327.00	15.25	21.44	16.00	17.75
5	330.00	14.00	23.57	16.00	14.75
6	345.00	12.75	27.06	15.75	15.75

7	345.50	14.00	24.68	15.00	13.00	
8	349.00	13.75	25.38	13.50	13.25	
9	352.50	15.75	22.38	16.50	15.75	
10	360.50	14.75	24.44	14.50	14.25	
11	364.00	14.50	25.10	15.25	14.25	
12	364.50	14.00	26.04	17.25	15.75	
13	375.50	15.75	23.84	15.25	15.00	
14	378.00	15.50	24.39	16.75	16.00	
15	385.00	15.50	24.84	16.75	17.75	
16	385.50	15.00	25.70	16.00	15.00	
17	394.00	15.25	25.84	17.75	16.75	
18	403.50	17.75	22.73	17.75	16.75	
19	427.00	16.75	25.49	16.50	16.75	
20	446.00	16.50	27.03	17.50	20.50	
Minimum	314.00	12.00	21.44	13.50	13.00	
Mean	364.30	14.79	24.68	16.00	15.71	
Maximum	446.00	17.75	27.06	17.75	20.50	
SD	35.84	1.40	1.56	1.12	1.72	
Coef. var.	9.84	9.46	6.31	6.99	10.93	
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height	
1	236.50	10.00	23.65	13.25	13.25	
2	243.50	10.25	23.76	12.75	12.50	
3	249.50	10.00	24.95	12.00	13.00	
4	261.00	12.75	20.47	15.75	15.25	
5	263.50	11.75	22.43	14.50	13.50	
6	263.50	10.75	24.51	14.25	14.25	
7	278.50	13.75	20.25	16.50	15.50	
8	280.00	15.25	18.36	14.25	15.25	
9	281.00	13.25	21.21	15.25	15.00	
10	282.50	14.75	19.15	14.00	13.00	
11	283.50	11.50	24.65	14.50	15.00	
12	290.00	13.50	21.48	15.00	14.00	
13	291.00	14.25	20.42	14.50	13.00	
14	291.50	12.00	24.29	13.00	13.00	
15	294.00	13.50	21.78	17.25	15.00	
16	294.00	12.00	24.50	14.50	14.25	
17	295.50	14.25	20.74	16.50	15.50	
18	300.00	16.50	18.18	14.25	14.25	
19	302.00	14.25	21.19	17.50	15.75	
20	303.00	15.00	20.20	17.75	15.50	
Minimum	236.50	10.00	18.18	12.00	12.50	
Mean	279.20	12.96	21.81	14.86	14.29	
Maximum	303.00	16.50	24.95	17.75	15.75	
SD	19.83	1.87	2.16	1.60	1.06	
Coef. var.	7.10	14.45	9.93	10.74	7.45	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	13.25	3.00	1.0	15.25	2.75	1.0
2	14.50	1.00	1.0	17.00	1.75	1.5
3	14.75	1.50	1.0	19.50	2.50	1.0
4	16.25	1.25	1.0	20.25	1.50	2.5
5	16.25	0.75	2.0	20.25	2.00	2.0
6	16.75	1.00	1.0	20.50	1.50	2.0
7	18.25	1.50	1.0	21.75	1.75	2.0
8	18.25	1.75	1.5	22.50	1.75	2.0
9	18.75	1.25	1.0	22.50	1.75	3.0

10	19.00	1.50	2.0	22.50	2.25	2.5
11	19.00	1.75	1.0	24.00	2.25	1.0
12	19.50	1.75	1.0	24.25	1.25	3.0
13	19.50	0.75	2.0	24.25	1.50	2.5
14	20.00	1.00	1.0	25.25	1.25	3.0
15	20.00	0.50	2.0	25.25	2.00	1.0
16	20.25	2.25	1.0	26.50	2.75	1.0
17	20.50	1.50	1.0	26.50	1.00	2.5
18	21.00	2.00	1.0	27.50	1.75	3.0
19	25.50	1.25	1.7	28.00	2.25	3.0
20	29.50	1.50	1.0	34.00	2.25	3.0
Minimum	13.25	0.50	1.00	15.25	1.00	1.00
Mean	19.04	1.44	1.26	23.38	1.89	2.13
Maximum	29.50	3.00	2.00	34.00	2.75	3.00
SD	3.67	0.57	0.42	4.19	0.49	0.79
Coef. var.	19.26	39.85	33.51	17.94	25.95	37.30

S4.11: *Cliona thomasi* sp. nov. additional material **NIO 776**, Gulf of Mannar, Southeast India

Spicule dimensions [μm], N = 20 spicules

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	297.00	10.25	28.98	13.25	13.75
2	303.50	11.25	26.98	13.75	15.00
3	313.00	11.00	28.45	13.50	15.25
4	314.50	12.50	25.16	15.25	15.25
5	329.00	14.50	22.69	14.25	14.25
6	333.50	12.00	27.79	13.25	14.50
7	337.00	14.00	24.07	16.50	15.25
8	337.50	12.50	27.00	14.75	15.25
9	341.00	12.25	27.84	15.00	15.25
10	343.00	12.50	27.44	15.00	14.50
11	345.00	14.75	23.39	17.50	17.75
12	345.50	12.75	27.10	15.50	16.50
13	346.00	15.25	22.69	14.75	15.25
14	350.50	12.25	28.61	15.75	15.25
15	351.00	12.75	27.53	14.25	15.25
16	359.00	12.75	28.16	14.75	14.75
17	360.50	14.50	24.86	16.00	17.75
18	368.50	13.75	26.80	15.25	15.00
19	383.00	13.75	27.85	15.50	15.00
20	398.00	14.50	27.45	16.75	17.75
Minimum	297.00	10.25	22.69	13.25	13.75
Mean	342.80	12.99	26.54	15.03	15.43
Maximum	398.00	15.25	28.98	17.50	17.75
SD	24.84	1.35	1.99	1.15	1.14
Coef. var.	7.25	10.40	7.50	7.63	7.36
Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
1	212.00	12.00	17.67	14.50	16.00
2	243.50	9.00	27.06	9.25	14.00
3	247.50	10.50	23.57	12.75	14.00
4	275.00	10.25	26.83	12.75	12.75
5	275.00	10.75	25.58	12.00	13.00
6	276.00	10.75	25.67	14.50	14.25
7	278.50	12.75	21.84	12.75	13.50
8	283.50	11.25	25.20	12.75	14.00

9	285.00	10.50	27.14	11.75	10.75
10	288.00	10.50	27.43	12.75	12.50
11	288.50	11.25	25.64	13.25	14.25
12	288.50	11.00	26.23	13.00	14.50
13	289.00	12.25	23.59	15.00	15.50
14	292.50	11.75	24.89	14.75	15.50
15	294.00	11.50	25.57	13.00	13.25
16	296.50	12.00	24.71	12.00	14.50
17	297.50	12.25	24.29	14.50	14.50
18	299.00	11.50	26.00	14.25	14.25
19	305.50	12.75	23.96	16.25	14.75
20	321.50	11.75	27.36	12.50	12.50
Minimum	212.00	9.00	17.67	9.25	10.75
Mean	281.83	11.31	25.01	13.21	13.91
Maximum	321.50	12.75	27.43	16.25	16.00
SD	24.07	0.93	2.26	1.51	1.22
Coef. var.	8.54	8.23	9.04	11.42	8.77

Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
1	13.75	1.00	0.5			
2	14.25	0.75	1			
3	14.25	0.75	1			
4	15.00	0.75	1			
5	15.25	1.25	1			
6	15.25	0.75	1			
7	15.50	1.00	1			
8	15.50	0.75	1			
9	15.75	0.50	2			
10	16.50	0.75	1			
11	16.75	1.00	1		NA	
12	17.00	1.50	1			
13	17.00	0.75	1			
14	17.50	1.00	1			
15	17.50	0.75	1			
16	17.50	1.00	1			
17	18.00	0.75	2			
18	19.00	1.00	2			
19	19.25	0.75	0			
20	25.00	1.25	2			
Minimum	13.75	0.50	0.00			
Mean	16.78	0.90	1.13			
Maximum	25.00	1.50	2.00		NA	
SD	2.47	0.24	0.51			
Coef. var.	14.73	26.12	45.31			

S4.12: *Cliona thomasi* sp. nov. >choanosomal spicule dimensions across all Indian specimens from S4

Spicule dimensions [μm], N = 11 specimens, except for spiraster 2, where N = 3

Longer tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height
Minimum	338.60	12.99	18.70	15.03	15.14
Mean	353.06	14.74	23.79	16.26	16.32
Maximum	384.03	16.54	26.54	17.09	17.46
SD	13.24	0.90	1.90	0.66	0.76
Coef. var.	3.75	6.11	8.00	4.09	4.68

Shorter tylostyle	Length	Shaft width	Length : width ratio	Tyle width	Tyle height	
Minimum	252.33	11.31	19.90	13.21	13.61	
Mean	271.13	12.56	21.83	14.89	14.61	
Maximum	282.00	13.55	25.01	16.58	15.09	
SD	8.89	0.77	1.49	1.04	0.48	
Coef. var.	3.28	6.14	6.83	6.96	3.26	
Spiraster 1, 2	1-Length	1-Width	1-Bends	2-Length	2-Width	2-Bends
Minimum	15.05	0.74	0.50	20.23	1.69	0.95
Mean	17.22	1.14	1.24	21.78	1.82	1.62
Maximum	19.33	1.68	2.00	23.88	2.00	2.00
SD	1.18	0.34	0.35	1.89	0.16	0.58
Coef. var.	6.84	29.43	27.85	8.66	8.95	35.85

Supplementary table S5. Spicule dimensions used for taxonomic comparisons when assessing *Cliona thomasi* sp. nov. from the northern Indian Ocean. Spicule dimensions are given in μm as minimum-maximum (mean \pm standard deviation) for N=20 per specimen and spicule type. In some samples some spicule types were rare or the spicules were very sparse in the preparations, then fewer than N=20 were measured, and the last bold number after the semicolon provides the sample size. Where two types of tylostyles occurred, dimensions for the longer tylostyles are displayed first (blue), then those of the shorter tylostyles below (pink). Some of our *C. thomasi* sp. nov. specimens had unusual spirasters that we think are slightly abnormal (yellow), but of the same type as those that we usually found (green). They were here separately displayed. The upper set of values for *Spherospongia* spirasters refers to the putatively choanosomal elements (grey), the lower ones to the smaller, compound-spined spirasters that are typical in dermal crusts (orange). Where spirasters could not clearly be recognised as belonging to either the choanosomal or the dermal kind they were measured together. Abbreviations: CS – material from the second author’s collection; GI – Grande Island, BMNH – vouchers from the British Museum; indet. – here not further identified; LIVCM – voucher from the Liverpool Free Museum, now Liverpool World Museum; MGB – present material from western India; MNHN – voucher from the Paris Museum; MMS – Malvan Marine Sanctuary, NA – measurements not available. More detailed sample information is provided under “material examined” in the text. Specimens with asterisks were also used in the molecular analyses (see Table 1). These were also used to analyse tylostyle sizes in more detail for biometric analysis, separating choanosome and ectosome fractions. In the column ‘tissue fraction’ we also displayed proportions of the different spicule types for *C. thomasi* sp. nov., using the same colours as outlined above.

All data in μm				Tylostyles				Spirasters		
Species, specimens	Sample origin	Sample number	Tissue fraction, proportions spicules	Shaft length	Shaft width	Tyle width	Tyle length	Total length	Shaft width	Number of bends
<i>Cliona thomasi</i> sp. nov. from the Indian Ocean:										
<i>Cliona thomasi</i> sp. nov. Holotype, NIO 1002*	W India, GI	MGB 35*	Choanosome 87 vs. 13 %	307-382 (343 \pm 24)	11.8-17.0 (14.8 \pm 1.3)	13.0-19.3 (19.1 \pm 1.6)	13.0-19.8 (17.0 \pm 1.8)	13.0-25.3 (18.6 \pm 3.3)	0.8-2.3 (1.5 \pm 0.4)	0.0-2.0 (1.0 \pm 0.4)
				199-296 (266 \pm 28)	8.5-15.5 (12.7 \pm 2.0)	10.8-19.0 (15.1 \pm 2.4)	10.8-19.3 (15.1 \pm 2.2)	11.3-29.0 (23.4 \pm 4.2)	0.8-2.5 (1.7 \pm 0.5)	0.0-3.0 (1.0 \pm 0.8)
			> Ectosome 89 vs. 11 %	309-385 (345 \pm 20)	12.5-17.3 (15.1 \pm 1.3)	13.0-20.0 (17.0 \pm 1.9)	14.5-20.3 (17.0 \pm 1.6)	12.5-24.0 (17.8 \pm 3.1)	0.8-2.5 (1.5 \pm 0.5)	0.5-2.0 (1.0 \pm 0.3)
				262-307 (288 \pm 12)	11.3-16.0 (13.8 \pm 1.3)	11.5-18.8 (15.9 \pm 1.9)	14.0-18.5 (15.8 \pm 1.4)	NA		

All data in μm				Tylostyles				Spirasters		
Species, specimens	Sample origin	Sample number	Tissue fraction, proportions spicules	Shaft length	Shaft width	Tyle width	Tyle length	Total length	Shaft width	Number of bends
<i>Cliona thomasi</i> sp. nov. Paratype 1, NIO 1005*	W India, GI	MGB 33*	Choanosome	326-398 (357±20)	11.8-17.8 (14.9±1.5)	13.8-18.0 (16.4±1.0)	15.8-20.8 (17.5±1.3)	10.8-27.8 (19.3±3.6)	0.5-2.0 (1.4±0.4)	0.0-2.5 (1.3±0.5)
			100 %	220-297 (273±23)	10.0-14.5 (11.6±1.3)	11.3-15.8 (13.5±1.4)	12.3-16.8 (14.4±1.4; 14)	NA		
			> Ectosome	306-404 (346±23)	12.3-17.0 (14.1±1.4)	12.8-18.3 (16.1±1.3)	13.5-18.3 (17.0±1.3)	15.8-30.0 (21.2±3.6)	0.3-2.0 (1.2±0.5)	0.5-3.0 (1.7±0.9)
			100 %	188-303 (261±33)	7.8-19.5 (11.9±2.5)	9.8-19.5 (14.2±2.1)	9.0-18.3 (14.8±2.1)	NA		
<i>Cliona thomasi</i> sp. nov. Paratype 2, NIO 1003*	W India, MMS	MGB 6*	Unspecified	300-388 (345±26)	11.0-17.0 (13.6±1.6)	13.3-18.0 (16.0±1.2)	13.3-18.0 (15.1±1.4)	13.5-23.3 (16.9±2.7)	0.5-1.0 (0.7±0.2)	0.0-3.0 (1.4±0.7)
			100 %	240-306 (278±16)	10.8-16.3 (13.6±1.4)	14.0-20.3 (16.6±1.6)	13.0-17.8 (15.1±1.3)	NA		
<i>Cliona thomasi</i> sp. nov. Paratype 3, NIO 1004*	W India, MMS	MGB 8*	Unspecified	303-373 (339±22)	12.5-17.0 (14.4±1.5)	14.0-17.8 (15.8±1.2)	14.3-19.5 (16.2±1.3)	12.5-20.5 (16.6±2.0)	0.5-1.5 (0.9±0.3)	1.0-3.0 (1.4±0.6)
			100 %	202-301 (272±22)	9.3-15.3 (13.2±1.4)	12.0-17.8 (15.3±1.6)	11.8-18.0 (14.9±1.4)	NA		
<i>Cliona thomasi</i> sp. nov. NIO/BOD/P1	W India, MMS	MGB 1	Unspecified	301-404 (365±22)	12.5-17.5 (14.7±1.6)	15.0-18.3 (16.8±1.0)	14.0-19.3 (17.0±1.3)	16.0-16.3 (16.1±0.2; 2)	1.0-1.0 (1.0±0.0)	0.0-1.0 (0.5±0.7)
			100 %	220-305 (275±28; 12)	10.5-15.5 (12.4±1.6)	12.8-18.0 (15.1±1.8)	13.0-17.5 (14.8±1.4)	NA		
<i>Cliona thomasi</i> sp. nov. NIO/BOD/P3	W India, MMS	MGB 7	Unspecified	310-386 (348±18)	12.0-18.0 (14.5±1.7)	14.8-18.3 (16.1±1.0)	13.5-18.3 (15.3±1.1)	13.3-23.8 (18.1±2.9)	0.5-1.5 (0.8±0.2)	0.0-3.0 (2.0±0.8)
			100 %	219-293 (264±23)	11.5-16.3 (13.4±1.5)	13.3-22.5 (16.0±2.1)	13.3-17.8 (14.9±1.2)	NA		

All data in μm			Tylostyles				Spirasters				
Species, specimens	Sample origin	Sample number	Tissue fraction, proportions spicules	Shaft length	Shaft width	Tyle width	Tyle length	Total length	Shaft width	Number of bends	
<i>Cliona thomasi</i> sp. nov. NIO/BOD/P5	W India, MMS	MGB 9	Unspecified 91 vs. 9 % 100 %	306-375 (347±22)	12.8-18.0 (14.7±1.7)	12.3-20.0 (16.2±1.2)	13.0-18.5 (16.4±1.5)	13.3-21.8 (16.5±2.4)	0.8-2.0 (1.2±0.3)	0.0-2.0 (1.2±0.6)	
				189-294 (252±31)	7.8-15.0 (12.1±1.8)	9.5-17.3 (13.8±1.9)	10.8-18.0 (13.6±1.9)	NA			
<i>Cliona thomasi</i> sp. nov. NIO/BOD/P6	W India, MMS	MGB 10	Unspecified 95 vs. 5 % 100 %	309-386 (348±21)	12.5-17.3 (15.1±1.3)	12.0-19.5 (15.5±1.9)	13.0-19.8 (16.1±1.8)	8.5-21.8 (15.1±3.6)	0.5-1.5 (0.8±0.3)	1.0-4.0 (1.5±0.8)	
				231-301 (275±22)	10.3-17.0 (13.0±1.7)	12.0-19.3 (14.9±2.2)	11.5-17.5 (14.5±1.7)	NA			
<i>Cliona thomasi</i> sp. nov. NIO/BOD/P2	W India, MMS	MGB 21	Choanosome 92 vs. 8 % 14 vs. 86 %	307-406 (351±27)	12.3-17.5 (15.0±1.4)	13.0-20.0 (17.0±2.0)	14.3-20.5 (16.7±1.8)	14.0-26.0 (18.2±2.9)	0.8-2.8 (1.7±0.4)	1.0-3.0 (1.2±0.5)	
				193-300 (264±32)	7.5-15.3 (12.0±1.9)	11.3-18.3 (14.9±2.0)	8.0-18.0 (14.7±2.3)	14.8-28.3 (21.2±4.0)	1.5-2.5 (2.0±0.3)	0.0-3.0 (1.9±1.2)	
				> Ectosome 90 vs. 10 % 17 vs. 83 %	308-427 (352±32)	12.3-19.8 (14.8±1.8)	13.5-20.3 (17.3±1.9)	13.0-20.0 (17.0±1.7)	13.3-25.8 (18.1±3.4)	1.0-2.5 (1.7±0.3)	0.0-2.0 (1.1±0.4)
				224-300 (269±23)	9.0-15.5 (12.4±1.8)	12.0-19.3 (15.6±2.2)	12.0-18.0 (15.4±1.6)	13.3-31.3 (21.0±4.8)	1.8-2.8 (2.2±0.4)	0.5-3.0 (1.5±0.9)	
<i>Cliona thomasi</i> sp. nov. NIO/BOD/P4	W India, MMS	MGB 23	Choanosome 93 vs. 7 % 22 vs. 78 %	307-426 (384±35)	12.8-18.8 (16.5±1.6)	15.5-19.3 (17.0±1.2)	14.0-18.5 (16.8±1.2)	13.0-23.0 (17.1±2.1)	0.5-1.8 (1.2±0.4)	1.0-3.0 (1.2±0.5)	
				225-323 (282±25)	10.3-17.5 (13.2±1.9)	12.8-17.8 (15.5±1.5)	11.8-18.8 (14.8±1.7)	17.3-36.0 (23.9±4.9)	1.0-2.8 (1.8±0.4)	0.0-3.0 (2.0±1.1)	
				> Ectosome 90 vs. 10 % 17 vs. 83 %	314-446 (364±36)	12.0-17.8 (14.8±1.4)	13.5-17.8 (16.0±1.1)	13.0-20.5 (15.7±1.7)	13.3-29.5 (19.0±3.7)	0.5-3.0 (1.4±0.6)	1.0-2.0 (1.3±0.4)
				237-303 (279±20)	10.0-16.5 (13.0±1.9)	12.0-17.8 (14.9±1.6)	12.5-15.8 (14.3±1.1)	15.3-34.0 (23.4±4.2)	1.0-2.8 (1.9±0.5)	0.0-3.0 (2.1±0.8)	

All data in μm				Tylostyles				Spirasters		
Species, specimens	Sample origin	Sample number	Tissue fraction, proportions spicules	Shaft length	Shaft width	Tyle width	Tyle length	Total length	Shaft width	Number of bends
<i>Cliona thomasi</i> sp. nov. = <i>Cliona varians sensu</i> Devi <i>et al.</i> (2011)	S India, Palk Straits	NIO 776	Unspecified 95 vs. 5 % 100 %	297-398 (343 \pm 25)	10.3-15.3 (13.0 \pm 1.4)	13.3-17.5 (15.0 \pm 1.2)	13.8-17.8 (15.4 \pm 1.1)	13.8-25.0 (16.8 \pm 2.5)	0.5-1.5 (0.9 \pm 0.2)	0.0-2.0 (1.1 \pm 0.5)
				212-322 (282 \pm 24)	9.0-12.8 (11.3 \pm 0.9)	9.3-16.3 (13.2 \pm 1.5)	10.8-16.0 (13.9 \pm 1.2)	NA		
<i>Cliona thomasi</i> sp. nov. = <i>Suberites coronarius sensu</i> Carter 1887; spicule measurements from Schönberg 2000 (as <i>Anthosigmella varians</i>)	Mergui Archipelago	BMNH 1887.6.1.4	Unspecified	310-413 (368 \pm 29; 25)	12.5-18.8 (15.7 \pm 1.7)	17.5-21.3 (18.7 \pm 1.3)	NA	10.0-23.0 (17.4 \pm 2.9)	1.0-2.5 (1.6 \pm 0.3)	0-3 (1.2 \pm 0.6)
				NA				NA		
Means for the above specimens of <i>Cliona thomasi</i> sp. nov. (N in bold)	Indian Ocean		Mostly choanosome	339-384 (353 \pm 13; 12)	13.0-16.5 (14.7 \pm 0.9; 12)	15.0-18.7 (16.5 \pm 1.0; 12)	15.1-17.5 (16.3 \pm 0.8; 11)	15.1-19.3 (17.2 \pm 1.2; 12)	0.7-1.7 (1.1 \pm 0.3; 12)	0.5-2.0 (1.2 \pm 0.4; 12)
				252-282 (271 \pm 8.9; 11)	11.3-13.6 (12.6 \pm 0.8; 11)	13.2-16.6 (14.9 \pm 1.0; 11)	13.6-15.1 (14.6 \pm 0.5; 11)	NA		
<i>Sphaciospongia varians</i> as comparison material with very similar spirasters:										
<i>Cliona varians</i> (Duch. & Mich., 1964) (= <i>Suberites coronarius sensu</i> Carter, 1882)	Bahamas	BMNH 1954.3.9.396	Unspecified	308-464 (409 \pm 38)	8.3-12.0 (10.1 \pm 1.2)	9.5-16.3 (11.9 \pm 1.6)	10.0-20.8 (15.1 \pm 2.4)	16.3-23.8 (19.4 \pm 2.0)	0.8-1.8 (1.2 \pm 0.3)	0.5-1.5 (1.0 \pm 0.2)
	Honduras	BMNH 1954.3.9.398	Unspecified	311-446 (389 \pm 38)	8.5-15.0 (10.9 \pm 1.9)	10.5-17.0 (12.8 \pm 1.7)	13.3-18.5 (16.2 \pm 1.4)	11.5-20.5 (15.6 \pm 2.5)	0.8-1.8 (1.1 \pm 0.3)	0-1.5 (0.9 \pm 0.3)
	Jamaica	BMNH 1954.3.9.399	Unspecified	254-426 (375 \pm 45)	8.3-16.8 (11.1 \pm 2.0)	8.0-14.0 (11.1 \pm 1.3)	9.8-16.8 (13.7 \pm 2.0)	11.5-18.5 (14.8 \pm 2.1)	0.8-1.8 (1.1 \pm 0.3)	0-2 (1.0 \pm 0.3)
				NA						

All data in μm				Tylostyles				Spirasters		
Species, specimens	Sample origin	Sample number	Tissue fraction, proportions spicules	Shaft length	Shaft width	Tyle width	Tyle length	Total length	Shaft width	Number of bends
<i>Cliona varians</i>	Florida Keys	CS-FL-sk-08	Unspecified	300-450 (388±73)	7.8-12.8 (10.5±1.3)	9.3-15.3 (11.5±1.5)	11.5-18.5 (14.3±2.0)	11.5-20.8 (16.3±2.6)	0.8-1.8 (1.1±0.3)	0-1 (0.8±0.4)
				204-288 (249±25)	7.5-12.5 (9.2±1.3)	8.0-12.8 (10.5±1.5)	9.3-18.0 (12.5±2.1)			
Means for the 4 specimens of <i>Cliona varians</i> listed above (but N = 2 specimens for short tylostyles)	W Atlantic		Unspecified	375-409 (390±14)	10.1-11.1 (10.7±0.5)	11.1-12.8 (11.8±0.7)	13.7-16.2 (14.8±1.1)	14.8-19.4 (16.5±2.0)	1.1-1.2 (1.1±0.1)	0.8-1.0 (0.9±0.1)
				217-249 (233±22; 2)	8.8-9.2 (9.0±0.3; 2)	10.4-10.5 (10.5±0; 2)	12.1-12.5 (12.3±0.3; 2)			
Other <i>Cliona</i> spp. available as comparison material:										
<i>Cliona caribbaea</i> Carter, 1882 (holotype)	St. Vincent, SE Caribb.	LIVCM.ZL77	Unspecified	391-451 (421±19)	10.0-14.8 (12.2±1.4)	12.5-18.0 (16.0±1.9)	NA	23.8-35.8 (30.4±3.5)	0.5-1.0 (0.7±0.2)	4.5-9 (6.8±1.2)
<i>Cliona orientalis</i> Thiele, 1900	NE Australia	CS-MAG-b-14	Unspecified	251-414 (340±38)	5.5-11.8 (7.7±1.9)	6.4-12.9 (9.7±1.9)	8.8-16.3 (12.8±2.4)	NA	NA	NA
<i>Cliona viridis</i> (Schmidt, 1862)	Mediterranean	CS-MED-6	Unspecified	224-444 (366±65)	4.0-8.4 (6.8±1.0)	4.2-10.5 (8.5±1.4)	8.0-19.9 (11.8±2.8)	NA	NA	NA
<i>Sphaciospongia</i> spp. available as comparison material:										
<i>Sphaciospongia inconstans</i> (Dendy, 1887)	Andaman Islands	BMNH 1934.11.24.402	Unspecified	377-473 (424±27)	10.8-16.0 (12.6±1.0)	9.5-15.3 (12.4±1.7)	NA	-	-	-
				138-265 (203±35)	4.8-9.5 (7.5±1.3)	4.8-10.5 (8.4±1.6)	NA	11.0-15.5 (13.0±1.7; 7)	NA	NA
<i>Sphaciospongia poterionides</i> (Vacelet & Vasseur, 1971)	Madagascar	MNHN DJV 23	Unspecified	322-505 (422±54)	11.8-17.5 (14.2±1.7)	12.5-17.5 (15.5±1.4)	NA	-	-	-
				184-275 (221±24)	5.0-10.8 (7.8±1.5)	5.8-11.8 (8.6±1.6)	NA	10.8-23.5 (16.0±3.3)	NA	0-4 (1.9±1.2)

All data in μm				Tylostyles				Spirasters		
Species, specimens	Sample origin	Sample number	Tissue fraction, proportions spicules	Shaft length	Shaft width	Tyle width	Tyle length	Total length	Shaft width	Number of bends
<i>Sphaciospongia solida</i> (Ridley & Dendy, 1886)	Philippines	BMNH 1887.5.2.103.a	Unspecified	432-650 (562 \pm 62)	14.5-19.8 (17.3 \pm 1.5)	12.8-20.8 (16.5 \pm 2.0)	NA	33.0-72.8 (50.8 \pm 14.0; 7)	NA	0-5.5 (3.6 \pm 1.8)
				191-321 (251 \pm 42)	6.3-14.3 (9.4 \pm 2.3)	7.0-14.3 (10.3 \pm 2.3)	NA	10.0-25.8 (14.3 \pm 3.3)	NA	0-4.5 (1.9 \pm 1.8)
<i>Sphaciospongia tentorioides</i> (Dendy, 1905)	Sri Lanka	BMNH 1907.2.1.24	Unspecified	443-717 (584 \pm 60)	12.5-20.8 (16.9 \pm 2.1)	11.3-19.5 (16.4 \pm 1.8)	NA	23.3-35.5 (27.7 \pm 3.7; 8)	NA	NA
				162-372 (276 \pm 48)	7.5-12.5 (9.7 \pm 1.6)	8.8-15.5 (11 \pm 1.8)	NA	13.0-35.5 (20.9 \pm 5.8)	NA	NA
<i>Sphaciospongia vagabunda</i> var. <i>trincomaliensis</i> (Ridley, 1884)	Sri Lanka	BMNH 1877.5.21.1862	Unspecified	403-621 (513 \pm 63)	11.0-15.0 (12.8 \pm 1.2)	10.5-15.8 (12.4 \pm 1.3)	NA	23.8-33.3 (27.9 \pm 1.3)	NA	0-3 (1.8 \pm 1.1)
				139-328 (260 \pm 50)	3.0-11.8 (8.0 \pm 1.9)	3.3-10.5 (7.8 \pm 1.6)	NA	9.3-15.0 (12.4 \pm 1.6)	NA	0-3 (1.7 \pm 0.9)
<i>Sphaciospongia</i> indet., collected as " <i>Spirastrella cuspidifera</i> "	S Arabian coast	BMNH 1936.3.4.166	Unspecified	407-689 (539 \pm 67)	13.3-25.0 (19.2 \pm 2.7)	13.3-20.5 (16.6 \pm 2.0)	NA	-	-	-
				133-322 (228 \pm 41)	7.0-14.8 (10.0 \pm 1.9)	6.8-15.3 (8.8 \pm 2.0)	NA	13.8-33.3 (20.4 \pm 5.1)	NA	0-4 (2.0 \pm 1.1)

Supplementary table S6. Summary of taxonomic characters of *Cliona viridis* complex species in comparison with *Cliona thomasi* sp. nov.

For the present purpose the *C. viridis* species complex is defined as brown *Cliona* spp. with zooxanthellae and full-length tylostyles (i.e. not including *Cliona mucronata*, which also has short tylostyles). Spirasters can occasionally be missing. Spicule dimensions provided below refer to tylostyle shaft length x shaft width x tyle width, and to spiraster total length including spines. Except for "*Suberites coronarius*" only selected references are provided, largely relying on original descriptions. The most obvious characters that distinguish the listed species from *C. thomasi* sp. nov. are underlined. L:W – tylostyle length : width ratio, as an indicator of tylostyle slenderness (ratio around 40 or larger) or robustness (ratio around 20 or smaller).

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>C. acephala</i> Zea & López-Victoria, 2016	Colombian Caribbean (type locality)	Dark brown sponge in β -morphology (few mm thick crust, excavation 1-3 cm deep), with slender subtylostyles with variable tyles, or as styles (340-425 x 7.8-13.5 x 6.9-10.3 μ m; L:W 31-44). No microscleres.	Zea & López-Victoria (2016)	<i>C. acephala</i> can be distinguished from <i>C. thomasi</i> sp. nov. by its slender tylostyles that can be near stylar. Spirasters occur in <i>C. thomasi</i> sp. nov., but are absent in <i>C. acephala</i> .
<i>C. albimarginata</i> Calcinai et al., 2005	N Sulawesi, Indonesia (type location); E Africa	Dark brown sponge in β -morphology, with slender subtylostyles (288 x 4.6 μ m; L:W 63), irregular amphistyles (12.9 μ m) and spirasters with multi-split spines (12.8 μ m). Oscular collars white.	Calcinai et al. (2005); Azzini in Calcinai et al. (2008)	With very similar habit compared to <i>C. thomasi</i> sp. nov. However, <u>tylostyles of <i>C. albimarginata</i> are shorter and much more delicate than in <i>C. thomasi</i> sp. nov., with oval instead of round tyles.</u> Spirasters are less regular, with spines in looser distribution.
<i>C. aprica</i> Pang, 1973	Jamaica, Caribbean (type location)	Dark brown sponge exclusively in α -morphology, but often with papillar fusion. Tylostyles can be strongly bent, with oval or spherical tyles, always terminal (in 0-5 m water depth: 326 x 8.4 x 9.3-11.4 μ m; in 12-34 m: 286 x 7.9; L:W 36-39). Spirasters helical, straight or C-shaped, with spines in irregular distribution (in 0-5 m: 34.1 μ m; in 12-34 m: 33.9 μ m)	Pang (1973)	The habit and spicule morphology of <i>C. aprica</i> differ from those for <i>C. thomasi</i> sp. nov. <u><i>C. aprica</i> tylostyles are more slender than those in <i>C. thomasi</i> sp. nov., the spirasters are helical.</u> Spiraster spine clusters look more crowded than in <i>C. thomasi</i> sp. nov. See list of synonymies in Zea & Weil (2003) for further information.
	Caribbean	Dark brown sponge exclusively in α -morphology, but often with papillar fusion. Tylostyles spherical tyles, always terminal (329 x 8.2 x 12.0 μ m; L:W 40; means from their Table 1). Spirasters "high-helical", with multi-split spines (24.7 μ m).	Zea & Weil (2003)	

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>C. caesia</i> (Schönberg, 2000)	Central Great Barrier Reef (type location)	Sponge exclusively in α -morphology and with distinctive blue ring on oscules. Tylostyles 310 x 6.5 x 10.5 μ m; L:W 48. With slightly wider than high tyles. No spirasters.	Schönberg (2000); as <i>Pione caesia</i>	With characteristic habit easy to identify when papillae are extended. <u>Different from <i>C. thomasi</i> sp. nov. by exclusive α-morphology, blue oscular ring, slimmer tylostyles and missing spirasters.</u>
<i>C. caribbaea</i> Carter, 1882	St. Vincent, SE Caribbean (type location)	Ochre-yellow sponge in α -morphology. Robust tylostyles with well-formed spherical tyles (267 x 10.6 μ m; L:W 25). Long, helical spirasters (30 μ m).	Carter (1882)	The tylostyle shape in <i>C. caribbaea</i> is similar to that in <i>C. thomasi</i> sp. nov., but <u>the spirasters are helical, not predominantly C-shaped.</u> Interestingly, the original description for <i>C. caribbaea</i> is for an α -sponge, when later accounts usually refer to β -sponges and distinguish <i>C. caribbaea</i> from the α -sponge <i>C. aprica</i> . Rützler's (1974) record may still include more than one species or included the measurements of immature tylostyles, but Zea & Weil (2003) accepted his main account. Present conventions strongly rely on Zea & Weil (2003), who can be consulted for synonymies and further information.
	Jamaica, Caribbean	Yellow (α) to dark brown (β) sponge in α - to β -morphology. Comparatively robust tylostyles with oval to spherical tyles, never subterminal (a: 394 x 10.2 x 12.0-16.1 μ m; L:W 39; b: 357 x 13.3 x 12.2-16.8; L:W 27). Helical spirasters with mostly discrete, long, widely spaced spines (α : 38.3 μ m; β : 31.3 μ m).	Pang (1973), β -morphology as <i>C. langae</i>	
	Bermuda	Sponge of variable colour in α -morphology, with tendency for papillar fusion, but only rarely in β -morphology. Tylostyles with well-formed, slightly oval tyles (319 x 6 x 10.3 μ m; L:W 53). Delicate helical spirasters, with discrete or split spines (32.8 μ m).	Rützler (1974)	
	Caribbean, Florida, Bahamas	Light brown sponge in α -morphology (young) or comparatively thickly encrusting β -morphology (few mm thick). Robust tylostyles, with spherical or slightly oval tyles (360 x 9.9 x 13.1 μ m; L:W 36; means from their Tab. 1). Spirasters "low-helical", mostly with discrete spines, but also multi-split (33.5 μ m).	Zea & Weil (2003)	
	St. Vincent, SE Caribbean	From spicule preparation of holotype: Robust, comparatively straight tylostyles, with pronounced, round tyles (421 x 12.2 x 16.0 μ m; L:W 35). Long, very delicate, helical spirasters eith sparse, multi-split spination, with 6-7 bends (30.4 x 0.7 μ m).	Present study (Supplement S5)	

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>C. labiata</i> (Keller, 1880)	Bay of Naples, Tyrrhenian Sea, Mediterranean (type location)	Sponge in γ - or δ -morphology, colour variable, described as yellow, or greyish and green. Slightly curved tylostyles with wide central canal.	Keller (1880), as <i>Cribrella labiata</i>	The description is insufficient for an adequate comparison with <i>C. thomasi</i> sp. nov., and the sponge has not recently been redescribed or relocated. However, it seems likely that Keller had sampled the massive form of <i>C. viridis</i> , which <u>differs from <i>C. thomasi</i> sp. nov.</u> (see below). <i>C. labiata</i> needs to be re-examined in comparison with <i>C. viridis</i> , which would have seniority.
<i>C. minuscula</i> Schönberg et al., 2006	Central Great Barrier Reef (type location)	Sponge exclusively in α -morphology, with minute oscules. Slim tylostyles 225 x 4.5 x 7 μ m; L:W 50. No spirasters.	Schönberg et al. (2006)	Characteristic habit and smaller than usual tylostyles. <u>Different from <i>C. thomasi</i> sp. nov. by α-morphology, smaller and slimmer tylostyles and missing spirasters.</u>
<i>C. orientalis</i> Thiele, 1900	Ternate, Indonesia (type location)	Sponge described in α -morphology, with robust tylostyles (230 x 9 x 12 μ m; L:W 25) and helical spirasters with multi-split spines (25 μ m).	Thiele (1900)	<i>C. orientalis</i> is morphologically very similar compared to <i>C. thomasi</i> sp. nov. (α - or β -morphology, robust tylostyles). Spicule dimensions given in Schönberg (2000) vary much and may represent more than one species? Overall means in Thiele (1900) and Schönberg (2000) are quite similar, however. <u>The tylostyles are mostly slimmer than in <i>C. thomasi</i> sp. nov., and the spirasters are predominantly helical.</u>
	Ternate, Indonesia and central Great Barrier Reef	For the holotype, from Schönberg (2000): tylostyles (270 x 10 x 13 μ m; L:W 27), spirasters (20.8 μ m). Occurs in α - and β -morphology on the Great Barrier Reef with mean tylostyle dimensions (270 x 7 x 10 μ m; L:W 39).	Schönberg (2000)	
	Central Great Barrier Reef	One specimen in the second author's collection: dark brown sponge in β -morphology. Tylostyles (340 x 7.7 x 9.7 μ m; L:W 44).	Present study (Supplement S5)	
<i>C. parenzani</i> Corriero & Scalera-Liaci, 1997	Ionian Sea, Mediterranean (type location)	Sponge in thick β - (several mm) to beginning γ -morphology (few cm thick), possibly with tendency to d-morphology (elevated papillae). Variable colour. Tylostyles (425 x 12.4 x 17.2 μ m; L:W 34). Spirasters with spine clusters and variable bends (38.4 μ m). Additionally with almost bare, vermiform spirasters (46.3 μ m).	Corriero & Scalera-Liaci (1997)	<u><i>C. parenzani</i> tylostyles are longer than those in <i>C. thomasi</i> sp. nov., and the latter species does not have bare spirasters.</u> The two species differ from each other.

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>C. paucispina</i> Rützler, 1974	Bermuda (type location)	Brown sponge in morphology between β and insinuating, but bioeroding, few mm thick. Bent subtylostyles with often subterminal tyles (341 x 6.2 x 8.9 μm ; L:W 55). Delicate helical spirasters, with characteristic reduced, short, discrete spines (28.8 μm).	Rützler (1974)	<i>C. paucispina</i> can easily be distinguished from <i>C. thomasi</i> sp. nov. by the reduced spination of the helical spirasters, the slimmer tylostyles and the small specimen size.
<i>C. subulata</i> Sollas, 1878	Type location unknown, assumed Indo-Pacific	Very short description, but possibly a <i>C. viridis</i> species. Using Sollas' spicule plate: tylostyles (ca. 350 μm), spirasters (ca. 50 μm) with straight, discrete spines (ca. 4 μm long).	Sollas (1878)	This species has never been formally reported again since it was described. It differs from <i>C. thomasi</i> sp. nov. by having significantly longer, helical spirasters with discrete spines.
<i>C. tenuis</i> Zea & Weil, 2003	Colombian Caribbean (type location)	Translucent-brown sponge in β -morphology. Comparatively small tylostyles with oval tyles (276 x 7.3 x 10.5 μm ; L:W 38; means from their Tab. 1). Spirasters high-helical, occasionally straight or C-shaped, with multi-split spines in dense arrangement (24 μm).	Zea & Weil (2003)	<i>C. thomasi</i> sp. nov. differs from <i>C. tenuis</i> , forming thicker crusts than <i>C. tenuis</i> , its tylostyles are longer and more robust, and its spirasters are less densely spined than in <i>C. tenuis</i> .
<i>C. thomasi</i> sp. nov. Mote et al., 2018 (present publication)	W India, holotype and paratype 1 from Grande Island, Goa, two further paratypes from Malvan, Maharashtra	Dark brown sponge in α - or β -morphology, with tendency to γ -morphology in thick specimens (few cm thick), eroding coral to a depth of 2-3 cm. Main tylostyles comparatively straight and robust, mostly spherical tyles (350 x 14.7 x 16.5 μm ; L:W 24). Spirasters can be S-, but are mostly C-shaped, with short, multi-split spines in regular distribution and apically denser (17.2 x 1.1 μm).	Present study (Supplement S4)	Original accounts by Carter (1882, 1887) for <i>Suberites coronarius</i> refer to two different species (see Thiele, 1900; Annandale, 1915; Dendy, 1916), with the 1882 publication referring to Caribbean material synonymised with <i>C. varians</i> , and only the 1887 paper for the material from Mergui Archipelago conspecific with our material (latter also erroneously described by Schönberg, 2002 as <i>Anthosigmella varians</i>). Dendy's (1916) sample from NW India is also likely conspecific with <i>C. thomasi</i> sp. nov., or may alternatively belong to <i>C. orientalis</i> . Dendy (1916) recognised the bioerosion ability of the Indian Ocean " <i>S. coronarius</i> " and transferred it into <i>Cliona</i> . Thomas' (1972, 1979) samples are here tentatively identified as <i>C. thomasi</i> sp. nov. as well based on the comparatively wide tylostyle shafts.
	Mergui Archipelago, Myanmar	"Buff-yellow" or dark brown sponge in β -morphology, eroding coral to a depth of ca. 1.3 cm.	Carter (1887), as <i>Suberites coronarius</i>	
	Okha, Gujarat, NW India	Sponge in β -morphology. Comparatively straight tylostyles with round tyles (350 x 12 x 14 μm ; L:W 29). Spiral and C-shaped spirasters (20 μm), apparently multi-split spines.	Dendy (1916), as <i>Cliona coronaria</i>	

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
	Palk Straits, S India	Dark brown sponge in β -morphology, never found in γ -morphology, erodes to 1.2 cm. Straight tylostyles with spherical tyles (1972: 366 x 13 x 15 μm ; L:W 28; 1979: 376 x 13 x 15 μm ; L:W 29; S4 for 2011: 339 x 9.1 x 11.6 μm ; L:W 37). S- and C-shaped spirasters (1972: 24 μm ; 1979: up to 25 μm ; S4 for 2011: 16.3 μm), with multi-split spines.	Thomas (1972, 1979), as <i>Cliona orientalis</i> ; Devi et al. (2011), as <i>Cliona varians</i> ; Present study (Supplement S4-5; NIO 776)	
	Mergui Archipelago, Myanmar	Measurements for Carter's 1887 sample from Schönberg (2000): Tylostyles (368 x 15.7 x 18.7 μm ; L:W 23), spirasters mostly C-shaped (17.4 μm)	Schönberg (2000, 2002), as <i>Anthosigmella varians</i>	
<i>C. tumula</i> Friday et al., 2013	Lower Florida Keys (type location)	Dark brown sponge in γ -morphology. Slender tylostyles with variable tyles, often oval and subterminal (380 x 8.9 x 11.7 μm ; L:W 43). Spiral spirasters (22 μm), with short, irregularly arranged, multi-split spines. Amphiasterose derivates, mostly spine-free, but with mushroom-like, terminal spine caps (17.3-25.4 μm).	Friday et al. (2013)	<i>C. thomasi</i> sp. nov. is presently not known to occur in massive growth. <i>C. tumula</i> tylostyles are <u>slimmer than in <i>C. thomasi</i> sp. nov., and spirasters tend to be helical.</u>
<i>C. undulata</i> (George & Wilson, 1919)	North Carolina, USA (type location)	Massive, light grey sponge with erect portions, likely δ -morphology. Slightly curved tylostyles in two size classes, with well-developed, but variable spherical tyles (200-460 x 6-10 μm ; L:W 33-46).	George & Wilson (1919), as <i>Suberites undulatus</i>	According to Bass (1993) this species was at some stage synonymised with <i>C. viridis</i> , but it was described without a reference to microscleres, and the colour is not suggestive of symbiotic zooxanthellae. The description for this sponge further implies that it may be closer to <i>Spheciospongia</i> than to <i>Cliona</i> . In particular, the taxon authors state that <u>tylostyles in the surface are smaller than those in the choanosome.</u> Based on these caveats it seems unlikely that the presently accepted <i>C. undulata</i> is a <i>C. viridis</i> species and is here discounted as comparison material for <i>C. thomasi</i> sp. nov.

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>C. varians</i> (Duchassaing & Michelotti, 1864)	Caribbean (type location); listed: Guadeloupe, St. Barthelemy, Virgin Islands	Light brown to yellow sponge with "distorted" erect parts, thus in γ - or δ -morphology, also as β sponge.	Duchassaing & Michelotti (1864), as <i>Thalysias varians</i>	<i>C. varians</i> forma <i>incrustans</i> has a similar habit compared to the thick β -morphology of <i>C. thomasi</i> sp. nov. Both species share the character that their spirasters are predominantly C-shaped. Despite Carter's (1882, 1887) same-name identifications, the 1882 sample is not conspecific with Carter's (1887) description of <i>Suberites coronarius</i> and was synonymised with <i>C. varians</i> (see van Soest et al., 2010). Working on the massive Caribbean sponges, Topsent disagreed with Dendy's (1916) decision for the Indian Ocean material to transfer <i>S. coronarius</i> into <i>Cliona</i> (see above). Based on the peculiar spirasters, Topsent created a new genus for this species, <i>Anthosigmella</i> , but the allocation later reverted to <i>Cliona</i> . <i>C. varians</i> has longer and more slender tylostyles than <i>C. thomasi</i> sp. nov., as well as more variable and more elongated tyles. <i>C. varians</i> spirasters are more uniform than in <i>C. thomasi</i> sp. nov.
	Honduras, Jamaica, Bahamas	Ochre sponge in γ -morphology, tylostyles, spirasters with multi-split spines on convex side, predominantly C-shaped (17 μ m)	Carter (1882), as <i>Suberites coronarius</i>	
	Banc de Campeche	Spirasters rare in the ectosome, common in the choanosome, never helical, but straight or C-shaped, with multi-split spines that are often more pronounced at the shaft ends.	Topsent (1918), as <i>Anthosigmella coronarius</i>	
	Jamaica, Caribbean	Brown sponge in γ -morphology. Tylostyles with elongated tyles (194-467 x 3-18 μ m; L:W 26-65). Predominantly C-shaped spirasters with compound spines (13-25 x 2 μ m).	Hechtel (1965), as <i>Anthosigmella varians</i>	
	Jamaica, Caribbean	Sponge in thick β -morphology (can be few cm thick). Slender tylostyles, straight or slightly curved, tyles oval, elongated, occasionally tylar and often subterminal (423 x 8.7 μ m; L:W 49). Spirasters frequently C-shaped, some straight (19.4 μ m).	Pang (1973), as <i>Anthosigmella varians</i>	
	Honduras, Jamaica, Bahamas, W Atlantic	From Carter's (1882) slides: Slim subtylostyles (364 x 10.0 x 11.5 μ m; L:W 36), very delicate, long, helical spirasters with multi-split spines (16.6 x 1.1 μ m).	Present study (Supplement S5)	
	Florida Keys	One specimen in the second author's collection: light brown sponge in γ -morphology. Tylostyles (286 x 8.0 x 10.3 μ m; L:W 38).	Present study (Supplement S5)	

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>C. viridis</i> (Schmidt, 1862)	Adriatic Sea, Mediterranean	Dark brown sponge in α - to γ -morphology. Tylostyles with pronounced, but elongated tyles, occasionally subterminal.	Schmidt (1862), as <i>Vioa viridis</i> (α) and <i>Papillina nigricans</i> (β - γ)	Schmidt's (1862) provided two descriptions and names for the same species, later often discussed (e.g. Barbieri et al., 1995; Bavestrello et al., 1996; Schönberg et al., 2005). Based on morphological and molecular evidence <i>C. nigricans</i> became a synonym of <i>C. viridis</i> (Rosell & Uriz, 1991; Barucca et al., 2007), even though <i>C. nigricans</i> was mentioned first (Schmidt, 1862). Other species (<i>Cliona copiosa</i> , <i>Cliona suberea</i> , <i>Cliona tremitensis</i>) were synonymised with <i>C. viridis</i> , a decision that is still occasionally challenged (e.g. Longo et al., 2017). The <u>spiraster spination of <i>C. viridis</i> differs from that of <i>C. thomasi</i> sp. nov., and the tylostyles are less robust in <i>C. viridis</i>. Tyle shapes are much more variable in <i>C. viridis</i> than in <i>C. thomasi</i> sp. nov., often elongated or subterminal or as stylar modification.</u>
	Mediterranean	Sponge in α - to γ -morphology, here as growth stages. Tylostyles increase with size through the growth stages (a: 80-455 μ m, b: 190-520 μ m, g: 220-600 μ m, x 1-11 x 6-12 μ m μ m in all morphologies; L:W ca. 38-50). Straighter (19.5 μ m) and helical spirasters (25 μ m).	Rosell & Uriz (2002)	
	Blanes, Balearic Sea, Mediterranean	One specimen: dark brown sponge in α -morphology. Tylostyles (366 x 6.8 x 8.5 μ m; L:W 54).	Present study (SupplementS5)	
<i>Cliona</i> indet.	Palk Straits, S India (Thomas, 1972); Mahe, Seychelles (Thomas, 1973); an unspecified site in Indian waters, likely also S India (Thomas, 1979); Lakshadweep (Thomas, 1989); Nicobar Islands (Namboothri & Fernando, 2012)	1972, 1979: Yellow α -growth sponge with tylostyles (285 x 8 μ m; L:W 36), helical spirasters (30-50 μ m) with long, conical spines (8 μ m). 1973: Alpha-growth sponge with tylostyles (330 x 10 x 12 μ m; L:W 33), helical spirasters with long, conical spines (up to 54 μ m). No description provided.	Thomas (1972, 1973, 1979), as <i>Cliona viridis</i> Thomas (1989, as <i>Cliona viridis</i>); Namboothri & Fernando (2012, as <i>Cliona viridis</i>)	Various Indian authors identified sponges sampled in the Indian Ocean as <i>C. viridis</i> . We regard those decisions as wrong, but cannot provide the correct species name(s). Where descriptions were given, the tylostyle characters could possibly still match those of <i>C. thomasi</i> sp. nov., but the description of the spirasters are more suggestive of e.g. <i>Cliona subulata</i> (Thomas, 1972, 1973, 1979). Where no adequate descriptions were provided we could not compare data (Thomas, 1989; Namboothri & Fernando, 2012).
	Maldives, Seychelles	Brown sponge in α -morphology. Straight tylostyles (240-377 x 4.9-6.6 μ m; L:W 49-57). Spirasters with compound spines, frequently C-shaped (16.5-24.7 x 2.5-3.0 μ m).	Calcinai et al. (2000), as <i>Cliona varians</i>	Abundant species, but in an untypical location for <i>C. varians</i> . <u>The tylostyles are very slim, with elongated tyles.</u> Spicule dimensions not typical for either <i>C. thomasi</i> sp. nov., nor for <i>C. varians</i> .

Species and taxon authorities	Location	Main characters	Reference	Taxonomic comments
<i>Timea stellifera</i> (Carter, 1887)	Mergui Archipelago, Myanmar	Published as being part of a community inhabiting the same substrate. No dimensions provided.	Carter (1887; bottom of his p. 75)	Here listed, because of the sample site shared with Carter's (1887) sample of <i>C. thomasi</i> sp. nov. and because this species was originally described as <i>Cliona</i> sp. and later erroneously listed as a synonym of <i>Cliona viridis</i> (Annandale, 1915). Annandale argued that Carter's material likely consisted of clionaid tylostyles contaminated with <i>Chondrilla</i> asters, an assumption that we cannot easily verify or reject. However, <u>the microscleres in question are spherasters, not spirasters.</u> As neither author provided tylostyle dimensions, the present comparison remains incomplete. Van Soest <i>et al.</i> (2017) placed this material into the genus <i>Timea</i> .

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