

Preliminary Report on the Alcyonacean and Pennatulacean Octocorals from the Izu and Ogasawara Islands

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Abstract. A total of 378 lots of Alcyonacea *sensu stricto* and two of Pennatulacea were collected in 2007–2009 from depths between 52 and 236.2 m off the Izu and Ogasawara Islands as part of the project, “*Study on the Origin of Biodiversity in the Sagami Sea Fossa Magna Element and the Izu–Ogasawara Arc*”. They comprised 30 identified and 13 indeterminate species belonging 15 genera in five families of Alcyonacea, and one identified and one indeterminate species belonging two genera in two families of Pennatulacea. Ten of the alcyonacean species are new to Japan: *Scyphopodium* aff. *ingolfi* (Clavulariidae); *Dendronephthya* (*D.*) *carnea*, *D.* (*Roxasia*) *mirabilis*, *D.* (*R.*) *snelli*, *D.* (*Morchellana*) *grandiflora*, and *Stereonephthya whiteleggei* (Nephtheidae); and *Chironophthya chalmaersi*, *Nephthygorgia* aff. *annectens*, *Nidalia palmata*, and *Siphonogorgia lobata* (Nidaliidae).

Key words: Izu Island, Ogasawara Islands, Alcyonacea, Pennatulacea, octocoral, new distributional records

Introduction

Starting with Studer’s (1888) report on six species of *Dendronephthya* from Döderlein’s collection, a total of over 73 species in nine families of Alcyonacea have been recorded from the Sagami Sea and adjacent seas (Wright and Studer, 1889 [*Challenger Expedition*]; Kükenthal, 1906 [Doflein’s collection], 1910; Kinoshita, 1909, 1910, 1911; Nutting, 1912 [*U.S.S. Albatross* collection]; Okubo, 1929; Utinomi, 1951, 1952, 1955, 1957, 1962 [Biological Laboratory of the Imperial Household’ collection], 1966, 1976; Utinomi and Imahara, 1976, Imahara, 1996, 2006; etc.). Also, beginning with Kölliker’s (1872) report on *Pteroeides breviradiatum* from Yokohama, a total of over 30 species in 12 families of Pennatulacea have been recorded from this area (Kölliker, 1880 [*Challenger Expedition*]; Balss, 1910 [Doflein’s collection]; Thomson and Rennet, 1927 [Tokyo University collection]; Utinomi, 1962 [Biological Laboratory of the Imperial Household’ collection]; Imahara, 1996, 2006).

The National Museum of Nature and Science, Tokyo conducted a research project, “*Study on the Origin of Biodiversity in the Sagami Sea Fossa Magna Element and the Izu–Ogasawara Arc*”, from 2007 to 2009. A total of 378 lots of alcyonaceans and two lots of pennatulaceans were collected from around the Izu and Ogasawara Islands during the course of this project. They have been partly identified, comprising 30 identified and 13 indeterminate species belonging 15 genera in five families of Alcyonacea, and one identified and one indeterminate species belonging two genera in two families of Pennatulacea. Ten of the alcyonacean species are new to Japan: *Scyphopodium* aff. *ingolfi* (Clavulariidae); *Dendronephthya* (*D.*) *carnea*, *D.* (*Roxasia*) *mirabilis*, *D.* (*R.*) *snelli*, *D.* (*Morchellana*) *grandiflora*, and *Stereonephthya whiteleggei* (Nephtheidae); *Chironophthya chalmaersi*, *Nephthygorgia* aff. *annectens*, *Nidalia palmata*, and *Siphonogorgia lobata* (Nidaliidae). Five other species belonging to two genera in two families, although previously recorded from Japan, are new to around these is-

lands: *D. (D.) spinifera*, *D. (R.) armata*, *D. (R.) cervicornis*, *D. (R.) tenera*, and *Ch. variabilis*.

Materials

The material studied was collected from depths of 52 to 236.2 m around Hachijō-jima Island and the Ogasawara Islands by the following methods: dredging by R/V *Tansei-Maru* (KT) of JAM-STECC (Japan Agency for Marine-Earth Science and Technology) in 2007 and 2009, and by R/V *Takunan* of the Tokyo Metropolitan Fisheries Experimental Station Hachijō Branch in 2007–2009, and also by dredging and crab pot by deployment R/V *Koyo* of the Ogasawara Fisheries Center in 2008 and 2009. The collecting localities at which alcyonaceans and pennatulaceans were recovered are listed in Table 1.

List of species

Subclass **Octocorallia** Haeckel, 1866

Order **Alcyonacea** Lamouroux, 1816
(emend. Verrill, 1865)

Family **Clavulariidae** Hickson, 1894

Genus ***Scyphopodium*** Bayer, 1981

1. *Scyphopodium* aff. *ingolfi* (Madsen, 1944)

Material. Two small colonies, northwest of Hachijō-jima Is. (33°20.911'N, 139°41.179'E, 213 m to 33°21.072'N, 139°40.514'E, 185 m), KT07-31-L7-200, 26 Nov. 2007 (coll. no. SGCA325).

Distribution of *Sc. ingolfi*. Off South Africa, Mediterranean Sea, Azores; reported depth range 216–500 m.

Remarks. Inseparably fused sclerites of the cortex of colony are characteristic of this genus and species. *S. ingolfi* has not previously been recorded from the Pacific Ocean.

Table 1. The collection localities of alcyonacean and pennatulacean material collected during the project, “Study on the Origin of Biodiversity in the Sagami Sea Fossa Magna Element and the Izu-Ogasawara Arc. in 2007–2009”.

Station code	Coordinates	Depth (m)	Date
KT-07-31-L7-200	33°20.910'N, 139°41.179'E – 33°21.072'N, 139°40.514'E	213 – 185	26 Nov. 2007
KT09-TW-02-03	27°03.030'N, 142°05.294'E – 27°03.000'N, 142°05.395'E	165.6	19 Mar. 2009
Takunan2007-1-St. 3	33°00.861'N, 139°52.527'E – 33°00.890'N, 139°52.538'E	95.0 – 94.8	24 Jul. 2007
Takunan2007-1-St. 5	33°01.366'N, 139°53.289'E – 33°01.220'N, 139°53.102'E	102.9 – 99.1	24 Jul. 2007
Takunan2007-1-St. 8	33°22.097'N, 139°39.206'E – 33°21.945'N, 139°38.833'E	154.5 – 156.6	25 Jul. 2007
Takunan2007-2-St. 5	33°21.697'N, 139°39.474'E – 33°21.976'N, 139°39.486'E	150.9 – 147.3	10 Sep. 2007
Takunan2009-St. 2	33°27.117'N, 139°42.964'E – 33°26.942'N, 139°43.497'E	194.0 – 236.2	14 Oct. 2009
Koyo2008-St. 12	27°00.193'N, 142°11.609'E – 27°00.208'N, 142°11.743'E	136 – 135	28 Oct. 2008
Koyo2008-St. 14	27°03.846'N, 142°07.644'E – 27°03.663'N, 142°07.869'E	109 – 97	28 Oct. 2008
Koyo2008-St. 15	27°04.548'N, 142°09.156'E – 27°04.729'N, 142°09.314'E	83 – 81	28 Oct. 2008
Koyo2008-St. 20	27°04.233'N, 142°15.185'E – 27°04.216'N, 142°15.058'E	54 – 52	29 Oct. 2008
Koyo2008-St. 25	27°07.308'N, 142°07.700'E – 27°07.032'N, 142°07.635'E	129 – 127	30 Oct. 2008
Koyo2008-St. 26	27°04.840'N, 142°08.934'E – 27°04.980'N, 142°09.151'E	84 – 87	30 Oct. 2008
Koyo2009-St. 7	27°01.723'N, 142°07.389'E – 27°01.928'N, 142°07.280'E	138.2 – 136	14 Oct. 2009
Koyo2009-St. 13	26°34.027'N, 142°10.803'E – 26°34.036'N, 142°10.811'E	92 – 93.1	14 Jul. 2009
Koyo2009-St. 14	27°13.129'N, 142°09.136'E – 27°13.150'N, 142°09.139'E	136 – 134.8	15 Jul. 2009
Koyo2009-St. 20	27°13.085'N, 142°09.190'E – 27°13.190'N, 142°09.226'E	135.8 – 135.5	15 Jul. 2009
Koyo2009-St. 21	27°07.049'N, 142°10.683'E – 27°07.017'N, 142°10.687'E	52.1 – 52	15 Jul. 2009
Koyo2009-St. 28	27°07.049'N, 142°10.683'E – 27°07.017'N, 142°10.687'E	52.1 – 52	15 Jul. 2009
Koyo2008-Crub pot	27°05.237'N, 142°06.982'E – 27°05.984'N, 142°06.999'E	123 – 131	27–28 Oct. 2008

* : The depth range for each station is given in the same order as the geographic coordinates.

Family **Telestidae** Milne-Edwards
and Haime, 1857

Genus **Telesto** Lamouroux, 1812

2. *Telesto* aff. *sagamina* Kinoshita, 1909 [Japanese name (herein after, Jn.): Sagami-koeda]

Material. One colony, northwest of Hachijō-jima Is. (33°20.911'N, 139°41.179'E, 213 m to 33°21.072'N, 139°40.514'E, 185 m), KT07-31-L7-200, 26 Nov. 2007 (coll. no. SGCA324).

Distribution of *T. sagamina*. Sagami Bay, ca. 90 m.

Remarks. This specimen looks like a solitary octocoral because it has no lateral polyps, but the very long polyp stalk with eight longitudinal ridges indicates that this specimen belongs to the family Telestidae. The sclerites of the polyp stalk, ovate forms with complicated tubercles and irregular small rods, closely resemble those of the original description for this species.

Family **Alcyoniidae** Lamouroux, 1812

Genus **Anthomastus** Verrill, 1878

3. *Anthomastus granulosus* Kükenthal, 1910 [Jn.: Enaga-umitengutake]

Material. Two colonies, northwest of Otōto-jima Is. (27°13.129'N, 142°09.136'E, 136 m to 27°13.150'N, 142°09.139'E, 134.8 m), Koyo2009-St20, 15 Jul. 2009 (coll. no. SGCA326); five colonies, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA327).

Distribution. Japan (Sagami Bay, Suruga Bay, Kii Peninsula), ?New Caledonia, South Africa; reported depth range 32–200 m.

Remarks. Only this species has barrel-shaped sclerites in the inner layer of the colony; all other species of this genus have thorny spindles. Williams (1990) suggested that this species belongs to the genus *Verseveldtia*, while Ofwegen (2007) indicated that it belongs to *Paraminabea*; however, the mushroom-like appearance of the colonies distinctly differs from *Paraminabea*, and the con-

struction of the coenenchyme differs from that of *Verseveldtia*. Probably this species could serve as the type of a new genus.

Genus **Eleutherobia** Pütter, 1900

4. *Eleutherobia* cf. *sumbawaensis* Verseveldt and Bayer, 1988

Material. One colony, northwest of Otōto-jima Is. (27°13.129'N, 142°09.136'E, 136 m to 27°13.150'N, 142°09.139'E, 134.8 m), Koyo2009-St20, 15 Jul. 2009 (coll. no. SGCA328); 12 colonies, east of Hachijō-jima Is. (33°01.366'N, 139°53.289'E, 102.9 m to 33°01.220'N, 139°53.102'E, 99.1 m), Takunan2007-1-St5, 24 Jul. 2007 (coll. nos. SGCA329, 331, 332, 333, 334); one colony, south of Hachijō-jima Is. (33°00.861'N, 139°52.527'E, 95.0 m to 33°00.890'N, 139°52.538'E, 94.8 m), Takunan2007-1St3, 24 Jul. 2007 (coll. no. SGCA330); three colonies, northwest of Hachijō-jima Is. (33°20.911'N, 139°41.179'E, 213 m to 33°21.072'N, 139°40.514'E, 185 m), KT07-31-L7-200, 26 Nov. 2007 (coll. no. SGCA335).

Distribution of *E. sumbawaensis*. Indian Ocean; 69 m

Remarks. These specimens closely resemble *E. sumbawaensis* but the sclerites composition in the stalk interior somewhat differs from that of the original description. This species is rather common at depths of 80 to 200 m along the Pacific coast of Japan.

5. *Eleutherobia unicolor* Kükenthal, 1906 [Jn.: Hime-umi-ichigo]

Material. One colony, east of Hachijō-jima Is. (33°01.366'N, 139°53.289'E, 102.9 m to 33°01.220'N, 139°53.102'E, 99.1 m), Takunan2007-1-St5, 24 Jul. 2007 (coll. no. SGCA337).

Distribution. Japan (Hakodate, Tsugaru Strait, Sagami Bay, Suruga Bay); reported depth range 25–180 m.

6. *Eleutherobia* sp.

Material. One small colony, east of Hachijō-

jima Is. (33°01.336'N, 139°53.289'E, 102.9 m to 33°01.220'N, 139°53.102'E, 99.1 m), Takanan2007-1-St5, 24 Jul. 2007 (coll. no. SGCA336).

Remarks. This specimen somewhat resembles *E. sumbawaensis*, but there are no rectangular sclerites in the interior of the stalk. In face, the sclerites in the stalk differ from those of any previously described species of this genus.

Genus *Sinularia* May, 1898

7. *Sinularia* aff. *polydactyla* (Ehrenberg, 1834) [Jn.: Takoashi-katatosaka]

Material. One small colony, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E, 52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. no. SGCA374).

Distribution of *S. polydactyla*. Japan (Amami-oshima, Okinawa, Bonin Ids.), Pacific Ocean, Indian Ocean; reported depth range 1–36 m.

Remarks. The collecting depth of this specimen is probably deeper than any previously record.

Family *Nephtheidae* Gray, 1862

Genus *Coronephthya* Utinomi, 1966

8. *Coronephthya macrospiculata* (Thomson and Mackinnon, 1910) [Jn.: Kanmurosaka]

Material. One colony, north of Hachijō-jima Is. (33°22.097'N, 139°39.206'E, 154.5 m to 33°21.945'N, 139°38.833'E, 156.6 m), Takanan2007-1-St8, 25 Jul. 2007 (coll. no. SGCA338); two colonies, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA339).

Distribution. Japan (Sagami Bay, west of Kyushu), Indian Ocean; reported depth range 78–211 m.

Genus *Dendronephthya* Kükenthal, 1905

9. *Dendronephthya (Dendronephthya) carnea*

(Wright and Studer, 1889)

Material. One colony, south of Chichi-jima Is. (27°04.548'N, 142°09.156'E, 83 m to 27°04.729'N, 142°09.314'E, 81 m), Koyo2008-St15, 28 Oct. 2008 (coll. no. SGCA362).

Distribution. Tahiti, 22–130 m.

Remarks. The specimens of Kükenthal (1906) from Sagami Bay and Tixier-Durivault and Prevorsek (1959) from Nafor Jolo, southwest Philippines, were probably of different species.

10. *Dendronephthya (Dendronephthya) spinifera* (Holm, 1894)

Material. One colony and three fragments, west of Chichi-jima Is. (27°07.308'N, 142°07.700'E, 129 m to 27°07.032'N, 142°07.635'E, 127 m), Koyo2008-St25, 30 Oct. 2008 (coll. nos. SGCA363, 364).

Distribution. Japan (Amakusa Is.), Philippines (Viti Is.), Great Barrier Reef; reported depth range 30 m.

11. *Dendronephthya (Roxasia) armata* (Holm, 1894)

Material. One colony, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E, 52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. no. SGCA359).

Distribution. Japan (Hirado Strait), Hong Kong, New Caledonia; reported depth 55 m

12. *Dendronephthya (Roxasia) cervicornis* (Wright and Studer, 1889) [Jn.: Hosoe-da-togetosaka]

Material. One colony and one fragment, west of Chichi-jima Is. (27°04.840'N, 142°08.934'E, 84 m to 27°04.980'N, 142°09.151'E, 87 m), Koyo2008-St26, 30 Oct. 2008 (coll. no. SGCA356); one small colony, south of Chichi-jima Is. (27°04.548'N, 142°09.156'E, 83 m to 27°04.729'N, 142°09.314'E, 81 m), Koyo2008-St15, 28 Oct. 2008 (coll. no. SGCA357); one colony, south of Chichi-jima Is. (27°03.846'N, 142°07.644'E, 109 m to 27°03.663'N, 142°07.869'E, 97 m), Koyo2008-St14, 28 Oct. 2008 (coll. no. SGCA361).

Distribution. Japan (Kii Peninsula), Pacific Ocean, Indian Ocean; reported depth range 55–250 m.

13. *Dendronephthya (Roxasia) gracillima* (Holm, 1894)

Material. One small colony missing upper part of polyparium, south of Chichi-jima Is. (27°00.193'N, 142°11.609'E, 136 m to 27°00.208'N, 142°11.743'E, 135 m), Koyo2008-St12, 28 Oct. 2008 (coll. no. SGCA358).

Distribution. Japan (Sagami Bay, Kii Peninsula, Hirado Strait), Philippines, Malacca Strait; reported depth range 55–65 m.

14. *Dendronephthya (Roxasia) mirabilis* (Henderson, in Thomson and Simpson, 1909)

Material. Three colonies, south of Chichi-jima Is. (27°04.548'N, 142°09.156'E, 83 m to 27°04.729'N, 142°09.314'E, 81 m), Koyo2008-St15, 28 Oct. 2008 (coll. nos. SGCA351, 352).

Distribution. Japan, Philippines, Java, Amboina; reported depth range 33–240 m.

Remarks. This species is new to Japan.

15. *Dendronephthya (Roxasia) mollis* (Holm, 1894)

Material. Two colonies, south of Chichi-jima Is. (27°04.548'N, 142°09.156'E, 83 m to 27°04.729'N, 142°09.314'E, 81 m), Koyo2008-St15, 28 Oct. 2008 (coll. no. SGCA350).

Distribution. Japan (Sagami Bay, Hirado Strait, Nomozaki), Korea, Philippines, Amboina; reported depth range 22–145 m.

Remarks. The canal wall of the stalk of these specimens is free from sclerites, although the original description noted a few minute antlers.

16. *Dendronephthya (Roxasia) puetteri* Kükenthal, 1905

Material. One fragment, south of Chichi-jima Is. (27°04.548'N, 142°09.156'E, 83 m to 27°04.729'N, 142°09.314'E, 81 m), Koyo2008-St15, 28 Oct. 2008 (coll. no. SGCA349).

Distribution. Japan (Sagami Bay, Hirado Strait), China Sea, Philippines, Malacca Strait;

reported depth range 70–150 m.

17. *Dendronephthya (Roxasia) snelliusi* Verseveldt, 1966

Material. Three colonies, west of Chichi-jima Is. (27°04.840'N, 142°08.934'E, 84 m to 27°04.980'N, 142°09.151'E, 87 m), Koyo2008-St26, 30 Oct. 2008 (coll. no. SGCA353).

Distribution. Sulu Sea; reported depth range 72–80 m.

Remarks. This species is new to Japan.

18. *Dendronephthya (Roxasia) tenera* (Holm, 1894) [Jn.: Hime-togetosaka]

Material. One colony, west of Chichi-jima Is. (27°04.840'N, 142°08.934'E, 84 m to 27°04.980'N, 142°09.151'E, 87 m), Koyo2008-St26, 30 Oct. 2008 (coll. no. SGCA355).

Distribution. Japan (Suruga Bay, Hirado Strait); reported depth range 28–65 m.

19. *Dendronephthya (Roxasia) sp.*

Material. One small colony, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E, 52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. no. SGCA371).

Remarks. This specimen resembles *D. (R.) jucunda* Tixier-Durivault and Prevorsek, 1960 from 550 m deep in Okinose, Sagami Bay, Japan, except for the size of the supporting bundle of polyps.

20. *Dendronephthya (Morchellana) grandiflora* (Henderson, in Thomson and Simpson, 1909)

Material. One colony, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA370).

Distribution. Off Colombo, Sri Lanka; reported depth 48 m.

Remarks. This species is new to Japan.

21. *Dendronephthya (Morchellana) pectinata* (Holm, 1894) [Jn.: Konbō-togetosaka]

Material. One small colony, southwest of

Chichi-jima Is. (27°03.030'N, 142°05.294'E, 165.6 m to 27°03.000'N, 142°05.395'E, 165.6 m), TW02-03, 19 Mar. 2009 (coll. no. SGCA365); two colonies, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA366).

Distribution. Japan (Sagami Bay, Kii Peninsula, Hirado Strait), Korea; reported depth range 10–182 m.

22. *Dendronephthya (Morchellana) rigida* (Studer, 1888) **comb. nov.**

Material. One colony missing the stalk, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.090'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA367).

Distribution. Japan (Sagami Bay, Suruga Bay, Bungo Channel), East China Sea, Malay Archipelago; reported depth range 109–194 m.

Remarks. The type specimen of this species is distinctly of the umbellatae type in branching mode and grouping of polyps (subgenus *Morchellana*), although this species was previously assigned to the subgenus *Roxasia* (divaricatae type) (e.g. Tixier-Durivault and Prevorsek, 1960).

23. *Dendronephthya (Morchellana) sp. 1*

Material. One moderately sized colony missing the stalk and two small colonies, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA360).

Remarks. These specimens closely resemble *Dendronephthya (M.) suluensis* Verseveldt, 1966 from the Sulu Sea, 72–80 m deep, in appearance, color, and construction of the anthocodial armature, but differ from it in the composition of the sclerites of the canal wall.

24. *Dendronephthya (Morchellana) sp. 2*

Material. One colony missing the stalk, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E,

52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. nos. SGCA368, 369).

Remarks. These specimens somewhat resemble *Dendronephthya (M.) grandiflora* (Henderson, in Thomson and Simpson, 1909) from off Colombo, Sri Lanka, at 48 m depth, but the size of the polyps is smaller and the color of the tentacle sclerites differs.

Genus *Scleronephthya* Studer, 1887

25. *Scleronephthya sp.*

Material. One colony, south of Chichi-jima Is. (27°04.548'N, 142°09.156'E, 83 m to 27°04.729'N, 142°09.314'E, 81 m), Koyo2008-St15, 28 Oct. 2008 (coll. no. SGCA373).

Remarks. The anthocodial spindles of this specimen, being bent, slender, and tuberculated with conical warts, are characteristic of this genus. But the size of these spindles is greater than in all known species of this genus.

Genus *Stereonephthya* Kükenthal, 1905

26. *Stereonephthya whiteleggei* Kükenthal, 1905

Material. One colony, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA342); one small colony, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E, 52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. no. SGCA347)

Distribution. Funafuti Atoll, northwest of Australia; reported depth range 73–128 m.

Remarks. This species is new to Japan.

27. *Stereonephthya sp. 1*

Material. One colony, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA343).

Remarks. This specimen closely resembles Thomson and Dean's (1931) and Verseveldt's

(1966) *Stereonephthya macrospiculata* Thomson and Mackinnon, 1910 from the Solomon Islands, 220–275 m deep. However, Thomson and Mackinnon's (1910) species has been transferred to the genus *Coronephthya* Utinomi (1966). This specimen seems to belong an undescribed species of the genus *Setronephthya* together with Thomson and Dean's and Verseveldt's specimens.

28. *Stereonephthya* sp. 2

Material. One small colony, south of Haha-jima Is. (26°34.096'N, 142°10.791'E, 96.5 m), Koyo2009-St13, 14 Jul. 2009 (coll. no. SGCA344); one small colony, west of Chichi-jima Is. (27°07.308'N, 142°07.700'E, 129 m to 27°07.032'N, 142°07.635'E, 127 m), Koyo2008-St25, 30 Oct. 2008 (coll. no. SGCA345); one small colony, west of Chichi-jima Is. (27°04.840'N, 142°08.934'E, 84 m to 27°04.980'N, 142°09.151'E, 87 m), Koyo2008-St26, 30 Oct. 2008 (coll. no. SGCA346).

Remarks. These specimens somewhat resemble *Stereonephthya spicata* Thomson and Dean, 1931 from the west coast of Flores, up to 40 m deep, and from Samau Island, southwest of Timor, up to 36 m deep, but the direction of the polyps, upwards, is quite different.

Genus *Umbellulifera* Thomson and Dean, 1931

29. *Umbellulifera striata* (Thomson and Henderson, 1905)

Material. Two colonies and two fragments, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E, 52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. no. SGCA340, 348); one small colony, south of Chichi-jima Is. (27°03.846'N, 142°07.644'E, 109 m to 27°03.663'N, 142°07.869'E, 97 m), Koyo2008-St14, 28 Oct. 2008 (coll. no. SGCA372); one colony and one fragment, south of Haha-jima Is. (26°34.027'N, 142°10.803'E, 92 m to 26°34.036'N, 142°10.811'E, 93.1 m), Koyo2009-St14, 14 Jul. 2009 (coll. no. SGCA341).

Distribution. Japan (Sagami Bay), North Pa-

cific Ocean to Indian Ocean, depth unknown.

Family **Nidaliidae**, Gray, 1869

Genus *Chironephthya* Studer, 1887

30. *Chironephthya chalmaersi* Verseveldt, 1966

Material. One small colony, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA319).

Distribution. Timor Sea, ca. 100 m.

Remarks. The thorny large spindle of the points is very characteristic for this species. Which is new to Japan.

31. *Chironephthya dofeini* Kükenthal, 1906 [Jn.: Nikuiro-kudayagi]

Material. One fragment, southwest of Chichi-jima Is. (27°03.030'N, 142°05.294'E, 165.6 m to 27°03.000'N, 142°05.395'E, 165.6 m), KT09-TW02-03, 19 Mar. 2009 (coll. no. SGCA312); one small fragment, north of Hachijō-jima Is. (33°22.097'N, 139°39.206'E, 154.8 m to 33°21.945'N, 139°38.833'E, 156.6 m), Takunan2007-1-St8, 25 Jul. 2007 (coll. no. SGCA313); one colony and two fragments southeast of Hachijō-jima Is., (33°27.117'N, 139°42.964'E, 194.0 m to 33°26.942'N, 139°43.497'E, 236.2 m), Takunan2009-St2, 14 Oct. 2009 (coll. no. SGCA314); one small fragment, northwest of Otōto-jima Is. (27°13.129'N, 142°09.136'E, 136 m to 27°13.150'N, 142°09.139'E, 134.8 m), Koyo2009-St20, 29 Oct. 2009 (coll. no. SGCA315); three small colonies and one fragment, west of Minami-jima Is. (27°01.723'N, 142°07.389'E, 138.2 m to 27°01.928'N, 142°07.280'E, 136 m), Koyo2009-St7, 14 Oct. 2009 (coll. no. SGCA317); one small colony, west of Chichi-jima Is. (27°04.840'N, 142°08.934'E, 84 m to 27°04.980'N, 142°09.151'E, 87 m), Koyo2008-St26, 30 Oct. 2008 (coll. no. SGCA318).

Distribution. Japan (Sagami Bay, Kii Peninsula, Tosa Bay, Okinawa), New Caledonia; reported depth range 28–600 m.

32. *Chironephthya scoparia* Wright and Studer, 1889

Material. One small colony, northwest of Hachijō-jima Is. (33°20.911'N, 139°41.179'E, 213 m to 33°21.072'N, 139°40.514'E, 185 m), KT07-31-L7-200, 26 Nov. 2007 (coll. no. SGCA316).

Distribution. Japan (Sagami Bay); reported depth range 170–631 m.

33. *Chironephthya variabilis* Hickson, 1903 [Jn.: Hosoe-da-kudayagi]

Material. Three colonies, north of Hachijō-jima Is. (33°22.097'N, 139°39.206'E, 154.5 m to 33°21.945'N, 139°38.833'E, 156.6 m), Takanan2007-1-St8, 25 Jul. 2007 (coll. no. SGCA313).

Distribution. Japan (Kerama Ids.), Micronesia, Singapore, Indonesia, Australia, New Caledonia, Indian Ocean; reported depth range 20–113 m.

34. *Chironephthya* sp. 1

Material. One colony, south of Haha-jima Is. (26°34.027'N, 142°10.803'E, 92 m to 26°34.036'N, 142°10.811'E, 93.1 m), Koyo2009-St14, 14 Jul. 2009 (coll. no. SGCA309).

Remarks. This specimen closely resembles *C. planoramosa* Harrison, 1909 from the Admiralty Islands in the construction of the anthocodial armature, but quite differs in its branching form and the composition of sclerites of the cortex.

35. *Chironephthya* sp. 2

Material. Two colonies and four fragments, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.190'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. nos. SGCA310, 311).

Remarks. These specimens closely resemble *S. boshmai* Verseveldt, 1966 from the Sulu Islands, 72–80 m deep, in the pure white color of the colony and the construction of the crown, but differ in the construction of the point and the color of the sclerites of the point and crown.

36. *Chironephthya* sp. 3

Material. One small colony, east of Hachijō-jima Is. (33°21.697'N, 139°39.474'E, 150.9 m to 33°21.976'N, 139°39.486'E, 147.3 m), Takanan2007-2-St5, 10 Sep. 2007 (coll. no. SGCA320).

Remarks. This specimen is quite peculiar in its appearance. The branches are very thick and short, and a few, and almost all of the polyps are crowded on the tips of the branches.

37. *Chironephthya* sp. 4

Material. One very small fragment, west of Chichi-jima Is. (27°04.840'N, 142°08.934'E, 84 m to 27°04.980'N, 142°09.151'E, 87 m), Koyo2008-St26, 30 Oct. 2008 (coll. no. SGCA322).

Remarks. This specimen is somewhat similar to the above specimens, but the number of point sclerites is larger.

Genus *Nephtyigorgia* Kükenthal, 1910

38. *Nephtyigorgia* aff. *annectens* (Thomson and Simpson, 1909)

Material. One colony, east of Nishi-jima Is. (27°07.049'N, 142°10.683'E, 52.1 m to 27°07.017'N, 142°10.687'E, 52 m), Koyo2009-St28, 15 Jul. 2009 (coll. no. SGCA308).

Distribution of *Ne. annectens*. Malay Archipelago, Great Barrier Reef, Indian Ocean; reported depth range 9–36 m.

Remarks. This species is new to Japan.

Genus *Nidalia*, Gray, 1835

39. *Nidalia macrospina* Kükenthal, 1906

Material. Four colonies and one fragment, northwest of Otōto-jima Is. (27°13.085'N, 142°09.190'E, 135.8 m to 27°13.090'N, 142°09.226'E, 135.5 m), Koyo2009-St21, 15 Jul. 2009 (coll. no. SGCA301); one fragment, west of Chichi-jima Is. (27°07.308'N, 142°07.700'E, 129 m to 27°07.032'N, 142°07.635'E 127 m), Koyo2008-St25, 30 Oct. 2008 (coll. no. SGCA302); one small colony, northwest of

Hachijō-jima Is. (33°20.911'N, 139°41.179'E, 213 m to 33°21.072'N, 139°40.514'E, 185 m), KT07-31-L7-200, 26 Nov. 2007 (coll. no. SGCA303); one small colony and one fragment, south of Chichi-jima Is. (27°00.193'N, 142°11.609'E, 136 m to 27°00.208'N, 142°11.743'E, 135 m), Koyo2008-St12, 28 Oct. 2008 (coll. no. SGCA304); one colony, north of Hachijō-jima Is. (33°22.097'N, 139°39.206'E, 154.5 m to 33°21.945'N, 139°38.833'E, 156.6 m), Takunan2007-1-St8, 25 Jul. 2007 (coll. no. SGCA305).

Distribution. Japan (Sagami Bay, Kii Peninsula, Tosa Bay), Indonesia, Arabian Sea; reported depth range 100–200 m.

40. *Nidalia palmata* (Simpson, 1907)

Material. One colony missing lower part of stalk, west of Chichi-jima Is. (27°07.308'N, 142°07.700'E, 129 m to 27°07.032'N, 142°07.635'E, 127 m), Koyo2008-St25, 30 Oct. 2008 (coll. no. SGCA306).

Distribution. Banda Sea, Indian Ocean, 90 m.

Remarks: This species is new to Japan.

41. *Nidalia* sp. 1

Material. One small colony, southwest of Chichi-jima Is. (27°03.030'N, 142°05.294'E, 165.6 m to 27°03.000'N, 142°05.395'E, 165.6 m), KT09-TW02-03, 19 Mar. 2009 (coll. no. SGCA307).

Remarks. This specimen similar to *N. borongaensis* Verseveldt and Bayer, 1988, from the Bay of Bengal, but the sclerites of the introvert are quite different.

42. *Nidalia* sp. 2

Material. One small colony, northwest of Hachijō-jima Is. (33°20.911'N, 139°41.179'E, 213 m to 33°21.072'N, 139°40.514'E, 185 m), KT07-31-L7-200, 26 Nov. 2007 (coll. no. SGCA321).

Remarks. This specimen somewhat resembles *N. macrospina* Kükenthal, 1906, but differs in the composition of the cortical sclerites and the color of the colony.

Genus *Siphonogorgia* Kölliker, 1875

43. *Siphonogorgia lobata* Verseveldt, 1982

Material. Two very small fragments, west of Minami-jima Is. (27°01.723'N, 142°07.389'E, 138.2 m to 27°01.928'N, 142°07.280'E, 136 m), Koyo2009-St7, 14 Oct., 2009, (coll. no. SGCA323).

Distribution. Taiwan, depth unknown.

Remarks. This species is new to Japan.

Order **Pennatulacea** Verrill, 1865

Family **Virgulariidae** Verrill, 1868

Genus *Scytalium* Herklots, 1858

44. *Scytalium* sp.

Material. One colony missing most of rachis, south of Haha-jima Is. (26°34.096'N, 142°10.791'E, 96.5 m), Koyo2009-St13, 14 Jul. 2009 (coll. no. SGCA376).

Remarks. This broken specimen could not be identified to the species level.

Family **Pennatulidae** Kölliker, 1880

Genus *Pteroeides* Herklots, 1858

45. *Pteroeides* aff. *dofleini* (Balss, 1909)

Material. One colony, south of Chichi-jima Is. (27°05.237'N, 142°06.982'E, 123 m to 27°05.984'N, 142°06.999'E, 131 m), Koyo2008-Crub pot, 27–28 Oct. 2008 (coll. no. SGCA375).

Distribution of *P. dofleini*. Japan (Sagami Bay and Suruga Bay), Gulf of Siam, ca. 150 m.

Remarks. This specimen closely resembles *P. dofleini*, but the size and situation of the plate of siphonozooids are different from those of *P. dofleini*.

Results and Discussion

A total of 30 identified species of Alcyonacea (s.s.) as well as 13 others identified only to genus were recorded in the present study. Several of the unidentified species of Alcyonacea are probably undescribed species. A more detailed treatment of these species and the revision of several previ-

ously described species will be published separately.

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伊豆小笠原諸島で採集されたウミトサカ目及びウミエラ目
(八放サンゴ亜綱) についての予報

今原幸光

国立科学博物館が2007年から2009年にかけて行った「相模灘における生物多様性の起源探求に関する研究、フォッサマグナ要素および伊豆-小笠原弧」において、主にドレッジによって水深52-236.2メートルの海底から、378ロットのウミトサカ類及びウミエラ類標本が採集された。これらの標本は、分類学的検討の結果、種まで判明した30種と属までの同定に止まった13種のウミトサカ類、および種まで判明した1種と属までの同定に止まった1種のウミエラ類に同定された。このうちのウミトサカ類は、次の10種が日本初記録種であった：*Scyphopodium* aff. *ingolfi* (Clavulariidae), *Dendronephthya* (*D.*) *carnea*, *D.* (*Roxasia*) *mirabilis*, *D.* (*R.*) *snelli*, *D.* (*Morchellana*) *grandiflora*, *Stereonephthya whiteleggei* (Nephteridae), *Chironephthya chalmarsi*, *Nephtygorgia* aff. *annectens*, *Nidalia palmate*, *Siphonogorgia lobata* (Nidaliidae)。また、次の5種は、本海域からの初記録種であった：*D.* (*D.*) *spinifera*, *D.* (*R.*) *armata*, *D.* (*R.*) *cervicornis*, *D.* (*R.*) *tenera*, *Ch. variabilis*。なお、属までの同定に止まった標本のうちのいくつかは、未記載種の可能性のある標本も含まれていて、それらについては今後発表予定である。

本調査では、八丈島近海については、東京都島しょ農林水産総合センター八丈事業所所属調査指導船「たくなん」、44トンの協力を得た。また、小笠原諸島海域については、海洋開発研究機構所属調査船「淡青丸」、610トン、および東京都小笠原水産センター所属調査指導船「興洋」、87トンの協力を得た。