

# Preliminary Report on Marine Thecate Hydrozoans Collected in 2007–2009 around Hachijōjima Island during Dredge Surveys by R/V *Takunan*

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**Abstract.** Dredge surveys, undertaken by R/V *Takunan* (Tokyo Metropolitan Center for Agriculture, Forestry and Fisheries on the Izu Islands) from 2007 to 2009, resulted in the collection of many thecate hydrozoans from the rocky bottom in 100–230 m depth around Hachijōjima Island. Their distribution, relative to Hachijōjima Island, is discussed for the thirty-one species identified to date.

**Key words:** Thecata, Hydrozoa, Cnidaria, Hachijōjima Island

## Introduction

A faunal survey project, conducted by the National Museum of Nature and Science (NSMT) to clarify the benthic marine invertebrate fauna in the area encompassing the Izu and Ogasawara Islands, had a primary aim of establishing the affinities of the high marine invertebrate biodiversity in Sagami Bay. To this end, dredge surveys were undertaken by NSMT, in collaboration with the Tokyo Metropolitan Center for Agriculture, Forestry and Fisheries on the Izu Islands (TMCAFFI) and the Tokyo Metropolitan Ogasawara Fisheries Center, from 2007 to 2010 (Namikawa *et. al.*, 2011).

As part of the faunal survey, dredge surveys were undertaken by R/V *Takunan* (TMCAFFI) around Hachijōjima Island (Izu Islands) during 2007–2009, resulting in many specimens of the-

cate species (Hydrozoa, Cnidaria) being collected from the offshore seabed (ca. 100–230 m in depth).

Preliminary investigations have resulted in the identification of thirty-one species to date, a significant increase in the number of known hydrozoan species recorded from around Hachijōjima Island.

A list of identified thecate hydrozoans is provided, together with sampling stations and the range of bathymetrical distribution. Sampling stations are detailed in Table 1.

Table.1 Dredge sampling locations for thecate hydrozoan specimens.

Stn.	Date	Sampling location	Depth
1	2007/7/25	33°22.509'N, 139°42.502'E – 33°22.383'N, 139°42.352'E	111–112 m
2	2007/9/10	33°21.697'N, 139°39.474'E – 33°21.976'N, 139°39.486'E	147–151 m
3	2008/7/17	33°19.038'N, 140°10.653'E – 33°18.828'N, 140°10.416'E	213–226 m
4	2009/10/14	33°22.577'N, 139°42.936'E – 33°22.414'N, 139°42.829'E	132–139 m
5	2009/10/14	33°27.117'N, 139°42.964'E – 33°26.942'N, 139°43.497'E	194–236 m
6	2009/10/14	33°19.937'N, 139°35.166'E – 33°20.146'N, 139°35.254'E	201–190 m

**Species list**Class **Hydrozoa**Order **Thecata**Family **Clathrozoidae** Stechow, 1921

1. *Pseudoclathroozoon cryptolarioides* Hirohito, 1967

Material. Stn. 3; 213–226 m depth.

Family **Haleciidae** Hincks, 1868

2. *Halecium beanii* (Johnston, 1847)

Material. Stn. 4; 132–139 m depth.

Family **Campanulariidae** Johnston, 1836

3. *Campanularia chinensis* Marktanner-Turneretscher, 1890

Material. Stns. 1, 5; 111–236 m depth.

Family **Lafoeidae** Hincks, 1868

4. *Acryptolaria angulata* (Bale, 1914)

Material. Stns. 4, 5, 6; 132–236 m depth.

5. *Acryptolaria conferta* (Allman, 1877)

Material. Stns. 1, 2, 4, 5, 6; 111–236 m depth.

6. *Cryptolaria exserta* Busk, 1858

Material. Stn. 2; 147–151 m depth.

7. *Cryptolaria pectinata* (Allman, 1888)

Material. Stns. 2, 5, 6; 147–236 m depth.

8. *Grammaria borealis* (Levinsen, 1893)

Material. Stn. 4; 132–139 m depth.

9. *Lafoea benthophila* Ritchie, 1909

Material. Stn. 1; 111–112 m depth.

10. *Lafoea dumosa* (Fleming, 1820)

Material. Stns. 1, 4, 5; 111–236 m depth.

11. *Zygophylax africana* Stechow, 1923

Material. Stn. 1; 111–112 m depth.

12. *Zygophylax biarmata* Billard, 1905

Material. Stn. 6; 190–201 m depth.

13. *Zygophylax convallaria* (Allman, 1877)

Material. Stn. 1; 111–112 m depth.

14. *Zygophylax curvitheca* Stechow, 1913

Material. Stns. 1, 2, 4, 5, 6; 111–236 m depth.

15. *Zygophylax pacifica* Stechow, 1920

Material. Stns. 2, 4, 5, 6; 147–236 m depth.

16. *Zygophylax sibogae* Billard, 1918

Material. Stns. 1, 2; 111–151 m depth.

17. *Zygophylax stechowi* (Jäderholm, 1919)

Material. Stn. 5; 194–236 m depth.

18. *Zygophylax tizardensis* Kirkpatrick, 1890

Material. Stns. 1, 2, 4, 6; 111–201 m depth.

Family **Syntheciidae**

Marktanner-Turneretscher, 1890

19. *Synthecium elegans* Allman, 1872

Material. Stns. 1, 4, 6; 111–201 m depth.

Remarks. A colony living on the stem of *Macrorhynchia balei*

Family **Sertulariidae** Lamouroux, 1812

20. *Abientinaria traski* (Torrey, 1902)

Material. Stns. 2, 6; 147–201 m depth.

21. *Abientinaria variabilis* (Clark, 1876)

Material. Stn. 2; 147–151 m depth.

22. *Sertularella gayi* (Lamouroux, 1821)

Material. Stn. 6; 190–201 m depth.

23. *Sertularella mirabilis* Jäderholm, 1896

Material. Stns. 1, 6; 111–201 m depth.

24. *Sertularella sinensis* Jäderholm, 1896

Material. Stn. 1; 111–112 m depth.

25. *Sertularia stechowi* Hirohito, 1995

Material. Stn. 1; 111–112 m depth.

Remarks. *Sertularia stechowi*, described (posthumously) from Sagami Bay by Hirohito (1995), is here recorded from outside Sagami Bay for the first time.

26. *Symplectoscyphus tricuspoidatus* (Alder, 1856)

Material. Stns. 1, 6; 111–201 m depth.

Family **Plumulariidae** McCrady, 1859

Subfamily **Halopteinae** Millard, 1962

27. *Antennella secundaria* (Gmelin, 1791)

Material. Stn. 1; 111–112 m depth.

Subfamily **Aglaopheniinae** Stechow, 1911

28. *Cladocarpus bocki* Jäderholm, 1919

Material. Stns. 1, 4, 6; 111–201 m depth.

29. *Macrorhynchia balei* (Nutting, 1906)

Material. Stns. 1, 4; 111–139 m depth.

30. *Macrorhynchia philippina* (Kirchenpauer, 1872)

Material. Stn. 1; 111–112 m depth.

31. *Macrorhynchia phoenicea* (Busk, 1852)

Material. Stn. 2; 147–151 m depth.

### Discussion

The warm Kuroshio Current has been described as a “belt conveyor” carrying marine animals from tropical and subtropical regions to Sagami Bay (Senou *et al.*, 2006). Because the current passes through the sea around Hachijōjima Island in the south Izu Islands, the region of the former is considered key to an understanding of the affinities of the fauna of Sagami Bay. The hydrozoan fauna around Hachijōjima Island is

discussed on the basis of the positional relationship of the island to Sagami Bay.

Sixteen thecate species (*Campanularia chinensis*, *Acryptolaria angulata*, *Cryptolaria pectinata*, *Lafoea benthophila*, *Zygophylax biarmata*, *Z. convallaria*, *Z. curvitheca*, *Z. pacifica*, *Z. sibogae*, *Z. tizardensis*, *Synthecium elegans*, *Sertularella mirabilis*, *Antennella secundaria*, *Macrorhynchia balei*, *M. philippina* and *M. phoenicea*) identified in this study are known from elsewhere in the Indo-Pacific (Bouillon *et al.*, 2004; Hirohito, 1995; Vervoort and Watson, 2003), including Sagami Bay (Hirohito, 1995). Their distribution in Sagami Bay is considered to have resulted from immigration from the region of Hachijōjima Island under the influence of the Kuroshio Current.

During a 130-year period of faunal studies in Sagami Bay, 184 thecate hydroid species have been recorded (Namikawa, 2006), 83 of these also having been recorded from Oshima and Niijima Islands (northern Izu Islands) (Hirohito, 1983), being the bulk of Thecata species known from those islands. Although still in its preliminary stages, the present study indicates that the thecate hydroid fauna of the Izu Islands is an important element in any consideration of the affinities of thecate hydroids in Sagami Bay. This should be clarified by continuing studies.

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八丈島近海から 2007～2009 年に調査船「たくなん」のドレッジ調査で  
採集された有鞘類のヒドロ虫類について（予報）

並河 洋

国立科学博物館は、伊豆諸島海域の海産無脊椎動物相の実体を明らかにするために、東京都島しょ農林水産センター八丈事業所と共同で、同事業所所属の調査船「たくなん」によるドレッジ調査を 2007～2009 年に伊豆諸島南部の八丈島周辺海域で実施した。このドレッジ調査により水深 100～230 m の岩礁性の海底から多数のヒドロ虫類の標本を得ることができ、これまでに有鞘類のヒドロ虫類 31 種が同定された。これら 31 種のヒドロ虫類は全て相模湾から報告されたものであった。過去に伊豆諸島北部の伊豆大島、新島周辺海域から記録されたほぼ全ての有鞘類のヒドロ虫類が相模湾から報告されたものであった。これらのことから、相模湾の有鞘類のヒドロ虫類相は、伊豆諸島海域のそれを要素として含んでいることが示唆された。今後も伊豆諸島海域において継続的に調査し知見を蓄積することにより、伊豆諸島海域～相模湾間におけるヒドロ虫類相の関係性の実体解明が期待される。