

**Bryozoa from the Danzyo Islands, Nagasaki  
Prefecture, Kyushu, Japan  
Pt. 1. On the *Cellaria* (Anasca)**

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**Introduction and Acknowledgements**

Since ORTMANN (1980) studied Recent Japanese bryozoans, there are many papers on Recent and fossils of this phylum in Japan. But there is very few report on them from southern part of Japan, especially one after Cenozoic from Kyushu region.

The bryozoans described in the present article were collected from the Danzyo Islands, situated about 70km southwest of Fukue Island, Nagasaki Prefecture (Fig. 1), by Professor Y. KAMADA and his group (KAMADA, *et al.*, 1975), and also this Islands are washed by the northward-flowing warm, saline, and clear water of the Tsushima Current, a branch of the Kuroshio Current.

The four samples containing bryozoans among ten around the Danzyo Islands are shown in Table 1. According to KAMADA *et al.* (*op. cit.*), the main submarine topographic units recognized around the Danzyo Islands are the steep slope near shore and wide flat plain offshore. And the offshore flat plain has two terraces, one is 100 to 120m in depth and the other is deeper than 140m. These two are covered with a thin layer of sediments. The latter is thought by them that this is the erosion and depositional surface of the lowermost sea level of the Würm glacial stage (about 15,000y.B.P.). The St. no. 2 is the sample from this part. They also say that although the area deeper than 150m was not surveyed, the flat plain is situated nearly at the edge of the continental shelf of the East China Sea and extends down to the continental slope which is the western side of the Okinawa trough.

From a many bryozoan specimens of all these four samples, only genus *Cellaria* is treated in the article. The rest will be published successively in near future. I once studied the fossil *Cellaria* from the Neogene strata of northern Japan (1973). So, the purpose of this article is to add the new data and to describe a part of the bryozoan fauna and thus con-

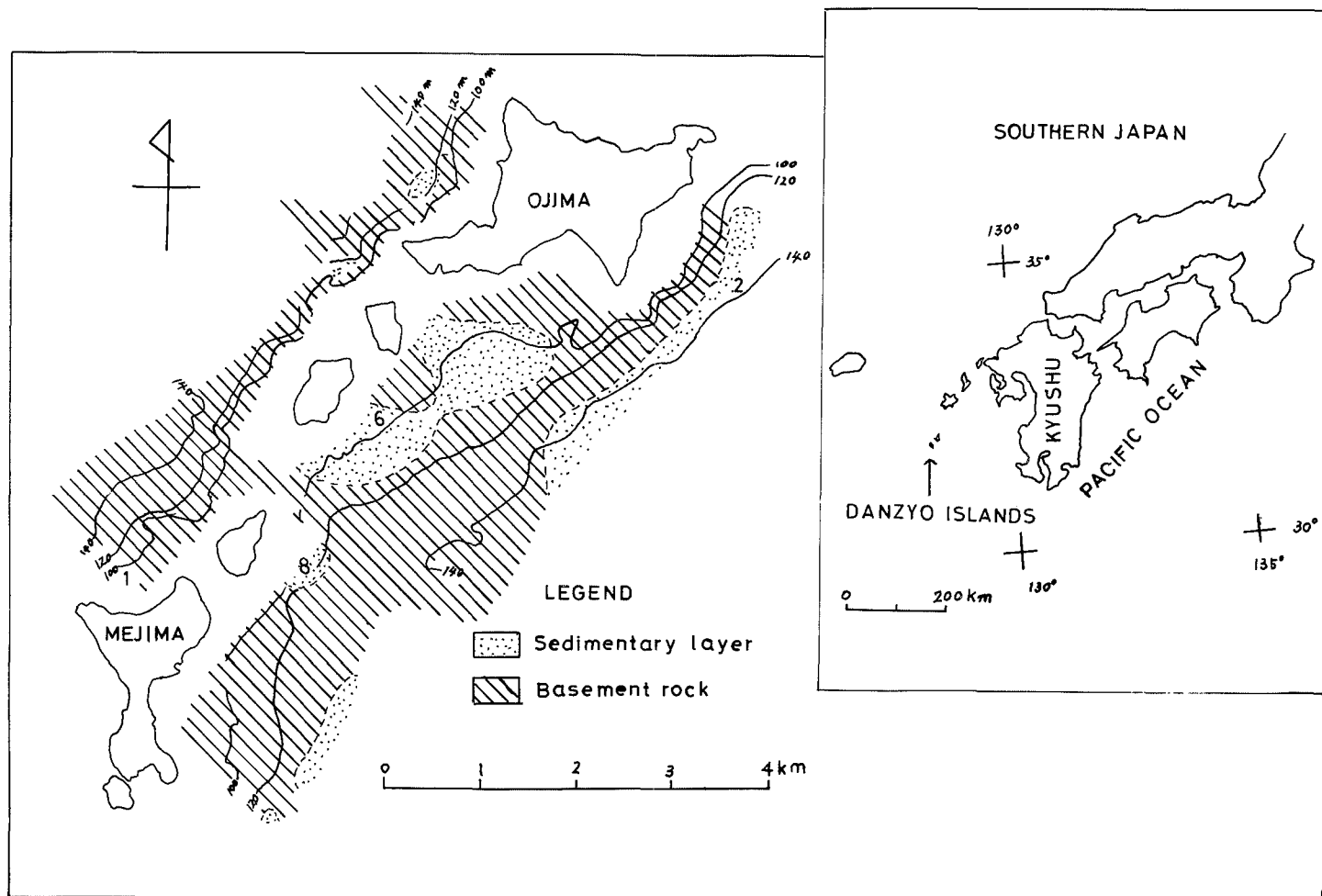


Fig. 1. Locality and Submarine geological maps around the Danzyo Islands (Compiled from Kamada, *et al.*, 1975).

tribute to the geographical and geological distribution of the phylum around Kyushu. From these samples, two species of the genus were identified, namely *Cellaria punctata* (BUSK), and *C. bassleri* HASTINGS. The latter is new to Japanese sediments.

At this place I hope to express my thanks to Professor Yasuhiko KAMADA of the Department of Geology, Faculty of Education, Nagasaki University, for his kindness and guidance, and being sent the materials for my use. A part of this work is supported from Science Reserch Fund of Japanese Ministry of Education (monbusho) (Project leader, H. MATSUO, No. 6054057 for 1985).

Table 1. Characters of sample (compiled from Kamada *et al.*, 1975).

St. no.	Bottom sediments	Biological facies	Depths (in m)
1	Medium to coarse sands, angular granule, fragments of calcareous material (CaCO <sub>3</sub> =60.39%)	Shells, small hermatic coral, bryozoans, echinoids, fragments of balanids.	48.5
2	Fine to medium sands, angular granule, fragments of calcareous material (CaCO <sub>3</sub> =59.95%)	Abundant shells, bryozoans, fragments of brachiopods, spines of echinoid.	145.0
6	Calcareous sand containing medium sand to granule (2-4 mm in diameter) (CaCO <sub>3</sub> =68.22%)	Shells, fragment of bryozoans, spicules of holothurian, foraminiferids.	97.0
8	Calcareous fragments of sand to conglomerate containing fine sand (not containing rock fragment) (CaCO <sub>3</sub> =76.77%)	Shells, fragments of abundant bryozoans, benthic foraminiferids.	113.0

The sample of St. no. 1 by the Smith-McIntyre bottom sampler and others by the pipe dredge.

#### Description and Remarks

Order Cheilostomata BUSK, 1852

Suborder Anasca LEVINSEN, 1909

Family Cellariidae HINCKS, 1880

Genus *Cellaria* ELLIS and SOLANDER, 1786

*Cellaria punctata* (BUSK), 1852

1852 *Salicornaria gracilis* BUSK, p. 17, pl. 63, fig. 3.

1884 *Salicornaria gracilis* BUSK, BUSK, p. 93, text-fig. 13A.

1887 *Cellaria gracilis* (BUSK), WATERS, p. 92, pl. 4, fig. 6.

1890 *Cellaria triangularis* ORTMANN, p. 32, pl. 2, fig. 13.

1921 *Cellaria triangularis* ORTMANN, OKADA, p. 30, text-fig. 7.

1923 *Cellaria triangularis* ORTMANN, OKADA, p. 225.

1926 *Cellaria punctata* (BUSK), HARMER, p. 337, pl. 21, figs. 14-16, text-fig. 13a.

1929 *Cellaria japonica* CANU & BASSLER, p. 171, pl. 20, fig. 8.

1932 *Cellaria punctata* (BUSK), HASTINGS, p. 413.

- 1934 *Cellaria triangularis* ORTMANN, OKADA, p. 11, fig. 8.  
 1935 *Cellaria triangularis* ORTMANN, OKADA & MAWATARI, p. 132.  
 1935a *Cellaria triangularis* ORTMANN, SAKAKURA, p. 15.  
 1935b *Cellaria triangularis* ORTMANN, SAKAKURA, p. 108.  
 1941 *Cellaria punctata* (BUSK), SILÉN, p. 70, text-figs. 85, 86.  
 1952 *Cellaria punctata* (BUSK), MAWATARI, p. 275.  
 1957 *Cellaria punctata* (BUSK), KATAOKA, p. 145.  
 1960 *Cellaria punctata* (BUSK), KATAOKA, p. 240, pl. 27, fig. 9.  
 1965 *Cellaria punctata* (BUSK), MAWATARI, p. 605, text-figs. 68a-d.  
 1973 *Cellaria punctata* (BUSK), HAYAMI, p. 397, text-fig. 6.  
 1983 *Cellaria punctata* (BUSK), HAYWARD & COOK, p. 34, fig. 8B.

*Material examined* : St. nos. 1, 6, 8 and 2. Specimens from 1 is very few, only four zoaria, from 6 and 8 are very abundant, more than 100, and from 2 is moderate, less than 50.

*Remarks* : On this species it has been already described in HAYAMI (1973).

*Distribution* : In Japan this species seems to be restricted to the Pliocene and Pleistocene, and is abundant Recent sea of the world including Japan.

*Cellaria bassleri* HASTINGS, 1947

- 1928 *Cellaria nodosa* CANU & BASSLER, p. 72, pl. 8, figs. 9, 10. Gulf of Mexico. Pliocene of Panama.  
 1947 *Cellaria irregularis* OSBURN, p. 19. Gulf of Venezuela.  
 1964 *Cellaria bassleri* HASTINGS ; CHEETHAM & SANDBERG, p. 1028, text-figs. 18, 19. Quaternary of Louisiana.

*Material examined* : St. nos. 1, 6, 8 and 2. Specimens from 1 and 2 are very few, from 6 is abundant, more than 50 zoaria, and from 8 is moderate.

*Description* : Many fragmental zoarium which are joined, slender cylindrical, segment having one or two swollen region to which ovicelled zoecia restricted. Zoecia regularly arranged, hexagonal or rhombic, in eight longitudinal rows. Ovicelled

zoecia wider than non-ovicelled one, so apparently look very short. Avicularia vicarious, as large as or sometimes longer than the zoecia, distally directed rostrum and pivotal condylus.

*Remarks* : According to CHEETHAM and SANDBERG (*op. cit.*), "This species was identified incorrectly by SMITT (1873, p. 4, pl. 1, figs. 57-59) with *Salicornaria tenuirostris* BUSK. CANU &

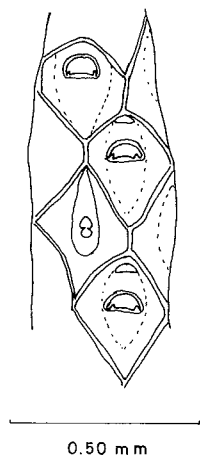


Fig. 2. *Cellaria bassleri* HASTINGS. Two ovicelled zoecia one non-ovicelled zoarium and vicarious avicularium of St. no. 6, DZ-6-0001.

BASSLER (1928, p. 72) described it under the preoccupied name *Cellaria nodosa*, and the names *C. bassleri* and *C. irregularis* were proposed to replace the junior homonym."

It seems to me that *C. tenuirostris* (BUSK), *C. bassleri* HASTINGS, *C. bicornis* (BUSK) (BUSK, 1884, p. 90, pl. 33, fig. 9 as *Salicornaria bicornis*), *C. dubia* (BUSK, *op. cit.*, p. 91 pl. 12, fig. 2, he described this with *S. dubia* in text but illustrated it with *S. tenuirostris*), and *C. boninensis* SILÉN, (according to BROWN 1952, this species is homonym of *C. tenuirostris* (BUSK)) have very resemble points, because in the specimens at hand there is resemble region to mentioned above species within the same one zoarium. So it should be restudied precisely them in near future.

The reason why I identified this species under the name of *C. bassleri* is almost accordance with the description of CHEETHAM and SANDBERG (*op. cit.*), and also according to BROWN (*op. cit.*) *C. tenuirostris* has not swollen region of ovicelled part. But the present specimens obviously have this region.

*Distribution* : If all name listed in *remarks* is one thing, it will be wide scattered in both Atlantic and Pacific Ocean, and Pliocene and Pleistocene.

## Discussion

Although only two species have found in comparison with very abundant zoaria of genus *Cellaria*, there is an interesting species as new to Japanese sediments, namely *C. bassleri*. Small number from St. no. 1 is thought that total numbers of other bryozoan specimens also are very few. In comparison with few number and rather poor-preserved specimen from St. no. 1, much more well-preserved zoaria were got from St. nos. 6 and 8. Specimens of St. nos. 1, 6 and 8 are thought to be Recent fauna, but that of St. no. 2 is to be mixed one, because of preserved state of bryozoans seem to have two types, namely rather dark and poor-preserved one (Pleistocene) and the other more light colored and well-preserved. It is impossible to determine age precisely by *Cellaria* now.

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