

Station 4. Fravellum sp.	Dead specimen
Station 5. Errina antarctica (gray)	Dead specimen
Station 6. Desmophyllum delicatum Yabe et Eguchi	Dead specimen
Fravellum marmeri Gardiner	Living specimen
Ceratorochus parphis Yabe et Eguchi	Living specimen
Coral sp.	Fragment
Station 7. Fravellum lurvatum Moseley	Living specimen

Those species of corals distribute in the deep sea bottom and the temperature of their living water are not so cold below zero centigrade. According to above mentioned fact and abundance of foraminifera test, the temperature of the bottom water at dredged stations seems not so cold below zero centigrade through the year.

#### Reference

- 1) J. Sanley Gardiner: Madreporarian corals

- with a count of variation in Caryophyllia. Discovery Report, XVIII, 323-338 (1932).  
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 3) Hiroshi Niino: On the soundings from the sea bottom at the offing of Prince Harald Coast Antarctic Continent. Jour. Tokyo Univ. Fish. (Special edition), 1, No. 2 (1958).

## ON THE BOTTOM SEDIMENT DREDGED BY THE SECOND JAPANESE ANTARCTIC EXPLORATION. ESPECIALLY ON THE GRAIN SIZE ANALYSIS\*

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### リュッツォウ・ホルム湾の底質について\*

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During January and February, 1958, the Japanese Antarctic Expedition ship "SOYA" sounded and dredged marine sediment off Lützow-Holm Bay area.

Eleven samples of bottom sediments were sampled on the shelf near Gunnerus Bank, continental slope of the bank and the upper

part of the slope at the mouth of the bay. Among the eleven samples, nine are analyzed for the grain size distributions. Sandy parts are analyzed by Emery's tube method and muddy parts by pipet method. Seven samples contain gravel; seven, sand; five, mud; three, Foraminiferal tests. Sandy fractions of sediments are mainly composed of rounded quartz and feldspar grains and a small quantity of sub-rounded heavy mineral grains. Gravels are pebblesized and are metamorphic rocks such as gneiss. Cumulative frequency curves of almost of all

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\*\*\* The Hydrographic Office.

of them show bimodal or trimodal patterns. Gravels are all angular and probably were transported by icebergs. The amount of Foraminiferal content may be available for one index

of productivity of sea water. Coarse sediments distributed at a considerable depth are related to the deep seated shelves around Antarctica.

## FORAMINIFERA ASSEMBLAGES OF THE ANTARCTIC OCEAN

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### 南極洋の有孔虫群とその意義

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Planktonic and benthonic Foraminifera in two plankton-net samples and eleven sediment samples of the Antarctic Ocean were studied. The results are in press as Special Publication Nos. 11 and 12 of The Biological Results of the Japanese Antarctic Research Expedition published by the Seto Marine Biological Laboratory of Kyoto University. The abstract is given below.

Only *Globigerina* sp. cf. *G. bulloides* D'ORBIGNY is present in the plankton-net samples, while the species is very rare and *Globigerina pachyderma* (EHRENBERG) is predominant in the sediment samples. The results appear to suggest two interpretations: (1) *Globigerina pachyderma* may occur deeper (than 200 m) in the water column, or (2) *Globigerina pachyderma* may not be planktonic in the region studied, and was deposited in the bottom sediment some time before the present, when the surface water was colder. The writer prefers the first interpretation, because nine out of eleven sediment samples contain glauconite granules indicating rather a slow rate of terrigenous sedimentation which is to be expected around the ice-covered Antarctica. Thereafter, radiocarbon ( $C^{14}$ ) dating of the calcareous tests of Foraminifera at a station, where *Globigerina*

*pachyderma* occupies about 97% of total Foraminifera population, has been made by Dr. KIGOSHI of the Gakushuin University, Tokyo. The results gives an age of the sediment containing the Foraminifera tests of approximately 5490 ( $\pm 370$ ) years, and proves the writer's second interpretation. The first interpretation must be ascertained by future investigation. Even if *Globigerina pachyderma* is found in a pelagic state in a future detailed survey, it will not be contradictory to the fact that the pre-modern (ca. 5490 years old) sediment is exposed at the bottom of the present ocean in the studied area, providing the productivity of *Globigerina pachyderma* is small enough to mask the pre-modern sediment extensively.

Benthonic Foraminifera assemblages in the eleven sediment samples were studied quantitatively. Bottom sampling was done with a small dredge at all stations except at one station, where a modified Phleger bottom sampler (a short gravity corer) was used. The sediment at all stations is sand except at three where mud is found. The boundary of the two sediment types lies at a depth of ca. 850 m. These sediments contain various kinds, sizes and amount of angular and subangular ice-rafted glacial material. A part of sediment sample at a station was preserved in formalin. The rose bengal

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