Cruise Summary

1. Cruise Information

- (1) Cruise ID: KS-21-14
- (2) Vessel: R/V SHINSEI MARU
- (3) Cruise Title

Extensive sampling of deep-sea benthic animals: Towards an understanding of their dispersal and diversification

(4) Chief Scientist

Yasunori Kano (AORI)

(5) Representative of the Science Party

S21-19 Yasunori Kano (AORI)

(6) Research Titles

S21-19 Extensive sampling of deep-sea benthic animals: Towards an understanding of their dispersal and diversification

(7) Cruise Period

2021/07/16 - 2021/07/21

(8) **Ports of departure/call/arrival** Hachinohe - Yokosuka

(9) Research Area

Off Ibaraki and Chiba and Sagami Bay

(10) Cruise Track



2. Overview of the Observation

- 1. Cruise Information
- Cruise ID
- KS-21-14
- Name of vessel
- R/V Shinsei-maru
- Title of cruise

Extensive sampling of deep-sea benthic animals: Towards an understanding of their dispersal and diversification

• Chief Scientist [Affiliation]

Yasunori Kano [Atmosphere and Ocean Research Institute, University of Tokyo]

• Cruise period

16 to 21 July 2021

• Ports of departure / arrival

Hachinohe / Jamstec, Yokosuka

• Research area

Off Kashima-nada, off Sotobo, and Sagami Bay

• Representative of Science Party [Affiliation]

Yasunori Kano [Atmosphere and Ocean Research Institute, University of Tokyo]

2. Overview of Research Activities

This cruise (KS-21-14) aimed to collect benthic animal specimens from bathyal (300– 3500 m) depths off Kashima-nada, Sotobo and in Sagami Bay for a better understanding of the distribution patterns and genetic differentiation of species in the deep sea. Material from this and previous cruises to the Oyashio-affected area, including off Tohoku and Hokkaido, is available for morphological, genetic and ecological comparisons between different regions and depths. Specimens were collected by using a 3-m beam trawl equipped with a pair of single NORPAC nets, as in the previous cruises. Also equipped in this occasion was a video recorder, which allowed us for the first time to evaluate the posture and position of the beam trawl relative to the bottom sediment and hence the effectiveness of the trawling operation. Animals in situ and the sea floor were also recorded as invaluable information on the biotic and abiotic settings of the sampling stations.

The trawling was conducted at thirteen stations as described below. Numerous large- to small-sized specimens were hand picked and ethanol-preserved or frozen. Sediment was sieved on board with 20 mm, 4 mm, 2 mm and 1 mm meshes and then sorted for smaller specimens of most animal phyla, while particular effort was made on molluscs, crustaceans, annelids and echinoderms. The smallest fraction (1–2 mm) of the sediment was preserved as a whole for sorting at our laboratory in the Atmosphere and Ocean Research Institute (AORI). The specimens are now being studied at AORI, Misaki Marine Biological Station (MMBS) and National Museum of Nature and Science, Tokyo (NSMT) for biogeographic, phylogenetic, ecological, and taxonomic purposes.

Sampling stations (in order of date and time) Off Kashima-nada IB8 July 17, 2021 On bottom: 36º28.10'N, 142º13.40'E, 3,519 m; off bottom: 36º28.29'N, 142º14.06'E, 3,471 m IB1 July 18, 2021 On bottom: 35°55.36'N, 141°05.63'E, 302 m; off bottom: 35°55.07'N, 141°05.92'E, 302 m IB2 July 18, 2021 On bottom: 35°56.62'N, 141°12.16'E, 627 m; off bottom: 35°57.35'N, 141°11.85'E, 629 m IB3 July 18, 2021 On bottom: 35°58.37'N, 141°19.04'E, 1,066 m; off bottom: 35°58.87'N, 141º19.04'E, 1,064 m IB4 July 18, 2021 On bottom: 36º00.10'N, 141º24.07'E, 1,504 m; off bottom: 35º59.73'N, 141º24.03'E, 1,499 m IB5-1 July 18, 2021 On bottom: 36°00.95'N, 141°28.04'E, 1,817 m; off bottom: 36°00.19'N, 141º28.04'E, 1,826 m IB5-2 July 18, 2021 On bottom: 36°00.44'N, 141°27.92'E, 1,816 m; off bottom: 35°59.70'N, 141º27.92'E, 1,822 m IB6 July 19, 2021 On bottom: 35°56.74'N, 141°32.65'E, 2,245 m; off bottom: 35°56.47'N, 141º32.33'E, 2,240 m Off Sotobo CH3 July 19, 2021 On bottom: 34°58.37'N, 140°45.71'E, 1,381 m; off bottom: 34°58.25'N, 140°45.70'E, 1,367 m CH1 July 19, 2021 On bottom: 34°56.87'N, 140°25.01'E, 396 m; off bottom: 34°56.77'N, 140°25.01'E,

401 m

Sagami Bay

SA1 July 20, 2021

On bottom: 35º06.61'N, 139º24.67'E, 1,143 m; off bottom: 35º06.91'N,

139º25.13'E, 1,127 m

SA2 July 20, 2021

On bottom: 35º04.19'N, 139º22.22'E, 1,380 m; off bottom: 35º05.08'N,

139º21.72'E, 1,162 m

SA3 July 20, 2021

On bottom: 35°00.70'N, 139°23.49'E, 1,330 m; off bottom: 35°01.10'N,

139º23.01'E, 1,358 m