

International Marine Biology Course (IMBC) 2018

(2018 7/28-8/1)

From 28th July to 1st August 2018, International Marine Biology Course (IMBC 2018) was organized at Sado Marine Biological Station (SMBS), Faculty of Science, Niigata University in Sado Island of the Japan Sea. The IMBC 2018 was supported by “Japan-Asia Youth Exchange Program in Science” (SAKURA Exchange Program in Science) under the grant by Japan Science and Technology agency. The main objective of the program was studying the biodiversity and evolution of marine animals through different fieldwork activities in different marine habitats by utilizing well-preserved marine ecosystems in Sado Island. For the event, we had 24 students and post-doctor and 5 invited researchers from 11 different universities in Asia and USA.

Institute (alphabetical order)	Participants (incl. staff)
Bangladesh Agricultural University (BAU)	4
Cochin University of Science and Technology (CUSAT)	4
East Carolina University (ECU)	2
Hanoi National University of Education (HNUE)	4
Monash University Malaysia (MUM)	1
National Taiwan Normal University (NTNU)	1
National Taiwan University (NTU)	2
Niigata University (NU)	4
The University of Hong Kong (UHK)	4
The University of Tokyo (UT)	1
Pukyong National University (PKNU)	2

In the course, we had hands-on activities listed below together with lectures including 2 basic lectures such as “classification” and “Characteristics of the Japan Sea and marine animals”, and 5 lectures from the invited researchers. We also had an optional outgoing activity during the course.

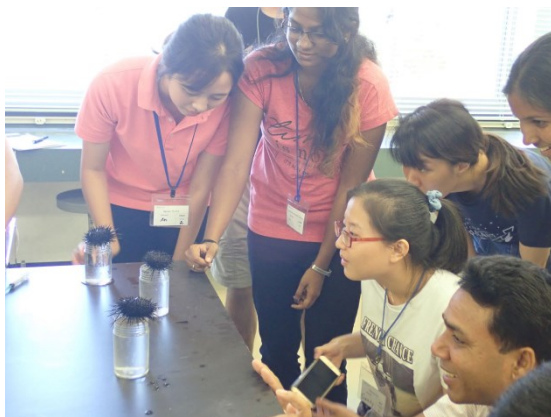
- Artificial fertilization of sea urchin, early development of embryos
- Animal sampling by snorkeling, observation, biological drawing
- Observation of sea firefly bioluminescence
- Plankton sampling and observation, biological drawing
- Group/individual presentation

On the day of arrival to SMBS, we had a greeting followed by general instruction of the course and living guidance. The participants also made a tour of SMBS facilities. As the first set of lectures, students learned about the characteristics of the Japan Sea and marine animals, and re-visited animal classification. After the lectures, the participants prepared okonomi-yaki pancake by themselves to mingle with each other.



Ice-breaking okonomi-yaki party

The second day started with a lecture about the importance of body fluid homeostasis in animals given by Prof. Emer. Yoshio Takei from the University of Tokyo. After the lecture, sea urchin fertilization experiment was performed. Each participant made sea urchin release its eggs/sperms and tried artificial fertilization using the eggs and sperms by him/herself. Students observed the early events of fertilization and embryo development using light microscopes.



Gametes collection from sea urchin



Observation using a light microscope

After lunch, following an afternoon lecture about marine bacteria in arctic environment given by Prof. Hatha, A.A. Mohamed from CUSAT, we did snorkeling sampling at a rocky shore in front of SMBS. It was a waveless sunny day, and perfect time for snorkeling. Many fishes, sea slugs, sea stars,

hermit crabs, sea urchins, ribbon worms, different types of sea snails, and many more were collected. After coming back from the sea, students classified the collected animals by themselves and realized how diverse marine animals are. After dinner, people made biological drawings of the animals they collected and also observed fantastic blue illumination from sea firefly (Crustacean: Ostoracoda).



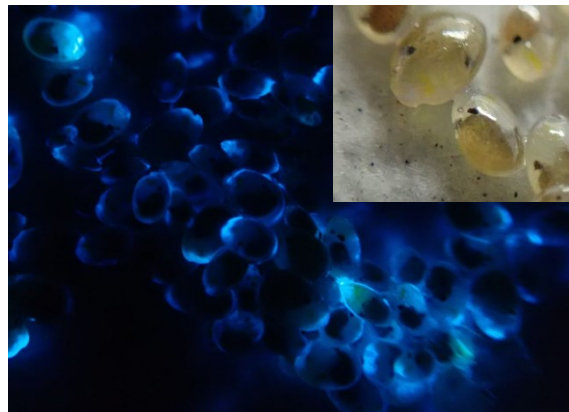
Snorkeling under the blue sky



Many animals could be found at shallow area



Classification of the collected animals



Blue luminescence of sea firefly

On the third day we had plankton sampling and observation. After morning physiology lecture about the control of zebrafish ovulation given by Prof. Zhu Yong from ECU, the participants boarded our research boat to measure water transparency and to collect planktons using a plankton net. Through the observations using light microscopes, students realized that planktons include a variety of animals, which belong to different phyla. We also had an optional outgoing activity to Sado Kinzan Gold Mine museum. In the evening, Dr. Tran Duc Hau from HNUE gave an interactive lecture about marine biology and students enjoyed animated discussions.



SMBS research boat, IBIS 2000



Measurement of water transparency



A variety of marine plankton were found



Interactive lecture by Dr. Hau

On the fourth day, the second snorkeling sampling and group presentation were performed as the final part of the course. Following the final lecture by Prof. Md Shahjahan from BAU, student enjoyed snorkeling around the rocky shore again below the blue sky. In the group presentation session, each group member introduced specific features of an animal in the selected phylum and further presented the features of the selected phylum as a group. Everyone presented excellent drawings and did wonderful presentations. It was very impressive. At the last night at SMBS, we had BBQ party. Pleasant time passed really fast.



Group presentation



BBQ party

On the last day, we drove back to the Ryotsu ferry port to board on a car ferry to Niigata. On the way, we stopped by beautiful sightseeing spots, Hiranezaki coast and Oonogame.



Hiranezaki coast



Oonogame

The 5 days and 4 nights program ran smoothly. Although the participants ranged from sophomore to post-doctor, swimming in the beautiful sea of Sado, finding a variety of marine animals, and observing them in detail were very much valuable for every participant. All participants enjoyed the course and learned the diversity of marine animals from it.

(Takashi KITAHASHI, SMBS)



Group photo