The learning material set of marine plankton: Resin-embedded specimens, image and video for the promotion of marine education

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Abstract: Plankton are important organisms for understanding marine ecosystems, yet social awareness of this assemblage of organisms is often poor. Therefore, we intend to improve and increase our production of resin-embedded marine plankton specimen sets for marine education. Using formalin-fixed plankton samples collected from the Southern Ocean and archived at the National Institute of Polar Research (NIPR, Tokyo), we prepared resin-embedded plankton specimens in 2017. As of October 2019, we produced 210 individuals pieces, comprising 52 species of marine plankton in 12 major groups. Resin embedded specimens are big, safety, clear, solid, robust and lightweight, so have various advantages as learning material as follows, (1) appearance in multiple aspects, (2) can observe whole animal with the naked eyes, (3) can observe fine structure with many types of magnifier, (4) can use at ordinary classroom, (5) be easily transported. Resin-embedded specimen are now registered in the ‘Database of Animal Specimens from Polar Regions’ of the NIPR for lending to outsiders. Then, in order to deepen the understanding of plankton learning with resin-embedded specimens, we devised a "learning material set" that includes images and video data that capture the colors and movements of living organisms in the actual field. We expect that this type of learning material will make a valuable contribution to marine education, at the primary to graduate school levels as well as for the general public.

References:

Sakurai et al. (2019) Report on trial manufacture of resin specimen using polar zooplankton net samples. Nankyoku Shiryô (Antarctic Record), 63, 1-8. (in Japanese)

Sakurai et al. (2020) New series of animal specimens from polar regions: resin-embedded specimens of marine plankton for the promotion of marine education. Bull. Plankton Soc. Jp. 67(1), 1-5. (in Japanese)

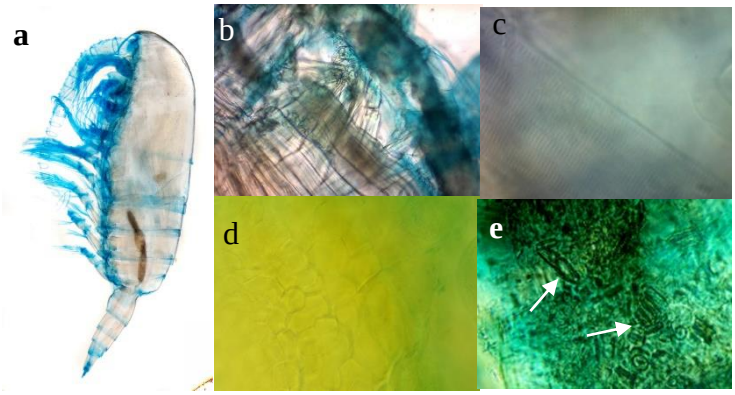

Fig. 1. Microscope observation image of resin-embedded specimen of *Calanus propinquus* Brady, Female. (a) whole animal and exoskeleton, Total Length: 5.2 mm. (b) and (c) muscle. (d) ovary. (e) diatoms in the digestive organ.

Fig. 2. Image of living Copepoda, *Calanus propinquus* Brady, Female.