

Giant Medusa Tracking in the Sea of Japan, 2004

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The Echizen Jellyfish *Nemopilema nomurai* is one of the largest medusa in the world; its maximum bell diameter is 2 meters and body weight is 150 kg. A main area of distribution of the Echizen Jellyfish is guessed to be the coastal



Photo by Singo Kurihara

Naoto Honda, back on land after attaching Pop-Up Tags to Echizen Jellyfish for research

area of China, but this jellyfish appeared in the Japanese coastal area in large quantities in 2002 and 2003, and caused serious damage to coastal fisheries.

Since 2004 I have been working on technical developments to reduce the damage to fisheries from the Echizen Jellyfish. However, the ecology of this jellyfish, such as its lifecycle and growth mechanism, or the distribution depth, is hardly elucidated under the present

conditions. If the distribution depth of the Echizen Jellyfish is investigated, fishermen could avoid the jellyfishes in fishery operations, and we might estimate the jellyfishes' transportation course and speed from an ocean current.

I applied PTT-100 Standard Archival and PTT-100 High Rate Archival Pop-Up tags to examine the swimming depth of the Echizen Jellyfish. I mounted the Pop-Up tags on two jellyfishes (both with bell diameter of approximately 1 meter) which were found offshore in the Sea of Japan in October 2004. While scuba diving, I tied the Pop-Up tags around a narrow part of the body (the neck?) of the jellyfishes with a thin plastic belt. Mounted in this way, the Pop-Up tags did not damage the body of the jellyfishes nor disturb their movement and swimming.

Each tag provided recorded data from its jellyfish; one of the tags washed ashore, and I could pick it up! The jellyfishes I observed through this experiment spent almost all their time floating on the surface of the sea, occasionally diving to a maximum depth of about 40 meters. The horizontal movement speed of the jellyfish was almost the same as the speed of an ocean current at the surface. Generally, plankton have circadian rhythm in their behavior. The Echizen Jellyfish had remarkable repetitious vertical up-down motion at night only once; continuous circadian rhythm was not confirmed in this investigation.

Our project just started last year and has not yielded enough results yet. Therefore, I am planning to continue this investigation with four Pop-Up tags this year.

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Right: Close up view of the enormous medusa, Echizen Jellyfish.
Bottom: Attaching the Pop-Up tag



Photos by Singo Kurihara