

## Efforts for Deep-Sea Creature Exhibition and the New Discovery of Their Ecosystem

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The Tokyo Sea Life Park (TSLP) has exhibited deep-sea creatures since 1989, when the TSLP opened. To display these deep-sea creatures, most of them were collected by TSLP staff. We also study the treatment of creatures that suffer from decompression disease due to the sudden change in water pressure by using a pressurized vessel. Any collected creatures that are unable to swim normally due to buoyancy abnormalities, are placed in a pressurized vessel at a collecting site until they normalize. The normalized creatures are transported to TSLP under pressurized conditions and are transferred to a pressurized water tank equipped with filtered circulation equipment, and adapt gradually into normal pressure conditions. This recompression treatment has been successfully used for species such as Red spikefish (*Triacanthodes anomalus*), Japanese perchlet (*Plectranthias azumanus*), and Japanese codling (*Physiculus japonicas*).

The TSLP has been exhibiting the mysterious ecosystem of deep sea creatures, and has recently made a new discovery. In particular, the reproductive biology of very little known deep-sea creatures. At the TSLP, the spawning of Hilgendorf's saucord (*Helicolenus hilgendorfi*) was observed in captivity. Therefore we discovered the oviparity of *Helicolenus hilgendorfi*, which was considered to be ovoviviparous.

We also succeeded in the long-term breeding of Japanese pancake devilfish (*Opisthoteuthis depressa*) by improving breeding conditions. Advance of its breeding knowledge lead us to acquire many findings on the biology of this animal, including its feeding and reproductive behaviors. The spawning was observed in captivity. We were also able to successfully obtain hatchling from an egg, which is new to science. The juvenile was kept for 5 days, and the first feeding of juvenile octopus was observed.