

OIST Researcher Discovers New Fish Species in Ryukyu Streams

Ken Maeda, a researcher in OIST's Marine Genomics Unit, has identified a new freshwater goby species on the islands of Okinawa and Iriomote. The species, *Stiphodon alcedo*, is described in the latest issue of the journal *Cybium*.

Dr. Maeda first spotted the species in 2006 while snorkeling in a local stream looking for specimens of other goby species. Gobies are one of the largest families of fish, composed of a diverse array of small species. After observing the goby for several days in the stream, Dr. Maeda realized that what he had found was a species which had never been known in Japan, and he started to study its taxonomy. Initially he expected that the fish belonged to an already-known species from the Philippines, but after he traveled to Singapore to examine some Philippine goby specimens in a museum there, he realized that he had found a new species. After he and his co-authors compared its appearance and genetic information carefully with those of related species, and reviewed the complicated taxonomy of the group, they were able to describe it as a new species with unique coloration, fin shape, and number of teeth. Because the male's head turns a beautiful metallic turquoise color during the mating season, Dr. Maeda gave it the scientific name *alcedo*, meaning kingfisher, and the Japanese name Hisui-bouzu-haze, meaning jade.

Stiphodon alcedo has only been found on Okinawa and Iriomote Islands in the Ryukyu Archipelago so far, but Dr. Maeda says this population probably appeared in the area relatively recently. Soon after hatching in freshwater streams, *S. alcedo* larvae drift to the sea, where they can be transported by ocean currents. The authors suggest that a possible explanation for why *S. alcedo* has not been reported before is that it may have recently been carried on the Kuroshio Current from the Philippines to the Ryukyu Archipelago. "The reason why we haven't been able to locate their origin, and why no one has reported this species in its home range before, is that fish faunas in Southeast Asia, especially the Philippines, are largely unexplored," explains Dr. Maeda. "We would like to investigate the fish fauna on the home islands of this species, which would help to elucidate the mechanism of their larval dispersal."

1) Journal and the date of publication:

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*** The publication of this issue was delayed and it was just published this month.

2) Title:

A new species of amphidromous goby, *Stiphodon alcedo*, from the Ryukyu Archipelago

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A male *Stiphodon alcedo* displaying bright colors for courtship (left) and a female *S. alcedo* with subtler coloration (right). The fish grows to a maximum length of six centimeters. (Photos: Ken Maeda) These photos are available at this URL. <http://www.oist.jp/download>

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About this research

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OIST information

The Okinawa Institute of Science and Technology Graduate University (OIST) is a new graduate school established in November, 2011, which aims to conduct internationally outstanding education and research in science and technology, and thus contribute to the self-sustaining development of Okinawa, and promote the advancement of science and technology in Japan and throughout the world. The OIST graduate education and research program is cross-disciplinary and aims to be at the leading edge of research in science and technology, including the life sciences, physical sciences, and mathematics. To lay the foundation for the Graduate University, 44 Research Units (over 220 researchers) have been launched so far, with research in five major areas of neuroscience, molecular, cell, developmental biology, mathematical and computational sciences, environmental and ecological sciences, as well as physics and chemistry. The first graduate class commences in September 2012.