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Full Papers

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The original scenery of the "Naiko" lagoons around Lake Biwa inferred by fish specimen survey

Tomohiko Fujita, Machiko Nishino and Kazumi Hosoya

Abstract Changes in the fish communities along the coastal lagoons termed "Naiko" surrounding Lake Biwa were investigated using a survey of preserved specimens. The survey was performed at 7 institutions or museums, and the results revealed that an indigenous species of fish that was abundant before the 1960s is now a rare species. However, some of the Naiko lagoons where these indigenous species were observed have been replaced by reclamations used as rice fields. Sampling records demonstrated a drastic change in the recent fish communities, and this has been exemplified by the sharp decrease in the unique indigenous species and synchronous

increase in the exotic Largemouth Bass (*Micropterus salmoides*) and Bluegill (*Lepomis macrochirus*). Fishes observed in the lagoons were basically classified in terms of migration type (sensu Hosoya, 2005). Many of the species observed fell into 2 categories: the Naiko-rice field migration type and the Naiko resident type. Until the 1960s, the original fish communities in the Naiko lagoon comprised various migratory species that belonged to the main Naiko resident type. This implies that such diverse original fish species should be restored in order to reconstruct the original aquatic environments.

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Gonadal sex differentiation in Ayu, *Plecoglossus altivelis altivelis*

Yan-Hui Liu, Tomonori Kuwada and Yasunori Koya

Abstract The process of gonadal sex differentiation was examined histologically in Ayu *Plecoglossus altivelis altivelis*. Asymmetric paired gonads, each containing a few germ cells, were situated on both sides of a supporting mesentery 60 days after hatching (DAH). At 80 DAH, the gonads of fish smaller than 30 mm in total length had differentiated into two types, based on the number of germ cells; the gonad with many germ cells apparently into an ovary, and that with a few germ cells and a tube-like structure in the interstitial tissue, into a testis. In the former, meiosis began just after ovarian differentiation and the development of ovigerous lamella (by 100 DAH). On the other hand, a sperm duct formed in the interstitial tissue in the testis by 111 DAH. However, the testis contained few germ cells until 156 DAH. It is suggested that gonadal sex differentiation in Ayu occurs from 80 DAH, i.e., between 30 mm and 35 mm in total length. It is further suggested that gonadal development between 80 and 156 DAH is directly related to total length, rather than days after hatching.

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Short Reports

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Discovery of crucian carp with a peculiar morphology from the Yufutsu Moor, Hokkaido, Japan

Takehiko Ito, Tomohiko Fujita and Kazumi Hosoya

Abstract Samples of crucian carp with a peculiar morphology, collected from the Yufutsu Moor, Hokkaido, Japan, were identified as *Carassius* sp. on the basis of having uniserial pharyngeal teeth and barbells absent. However, the population differed from other Japanese congeners by having a larger head and shallower caudal peduncle, also displayed some characters attributable to *C. carassius*, including a remarkable black cross bar on the caudal peduncle in young individuals, subterminal mouth and five dorsal unbranched rays, such characters corresponding to *C. carassius* morpha *humilis* sensu Breg (1964). All individuals were female triploids, but were clearly different from “Ginbuna”, the well-known Japanese triploid *Carassius* group, in morphological characters and body color. Although *C. carassius* has not yet been recorded from Hokkaido, it seems likely to have been one of the parental species resulting in this unique population.

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First record of a ponyfish, *Secutor indicius*, from Japan (Perciformes: Leiognathidae)

Seishi Kimura, Shoji Houki, Morihiko Yamada and Hiroyuki Motomura

Abstract A leiognathid fish, *Secutor indicius*, is reported here for the northernmost record of the genus and species, and the first record of the species from Japan, based on a single specimen collected from Uchinoura Bay, Kagoshima Prefecture, Kyushu Island. The description of the specimen is provided and a new Japanese name, "Hoso-ukeguchi-hiiragi", is proposed. The genus *Secutor* is distinguished from all other leiognathid genera by having the mouth angled upwards, located at the level of center of the eye, the lower jaw anterior profile almost vertical when mouth closed, and a black line from the anteroventral margin of the orbit to the lower jaw articulation. *Secutor indicius* is distinguishable from its congeners by the following combination of characters: cheek without scales; preorbital spine single, not forked; 87–111 lateral line scales; and 15–22 dark vertical markings on dorsolateral surface of body.

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First record of a goby *Sueviota larsonae* (Perciformes: Gobiidae: Gobiinae) from Amami-oshima Island, Ryukyu Islands, Japan

Koichi Shibukawa, Gento Shinohara and Keiichi Matsuura**Abstract** A single specimen of a gobiid fish, *Sueviota larsonae* Winterbottom and Hoese, was collected from a small mass of sponge of the poecilosclerid suborder Microcionina, accidentally hooked by longline at a depth of 64 m in a sheltered bay at Amami-oshima Island,

Ryukyu Islands, Japan. It represents the first record from Japanese waters and the northernmost record for the species. A brief account of the morphology of the Japanese specimen is provided with color photographs.

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Early life history of aquarium-held blind well goby *Luchiogobius pallidus*, collected from Wakayama Prefecture, Japan

Kentarou Hirashima and Hiroaki Takahashi

Abstract The blind well goby *Luciogobius pallidus* lives primarily in groundwater or spring in the western part of Honshu Island, Japan. Morphological changes and salinity tolerance of *L. pallidus* are described from artificially-reared eggs, larvae and juveniles. Aquarium-held *L. pallidus* spawned eggs (long axis 2.2 mm, short axis 0.7 mm) on 24 November 2003 (*n*=408) and 24 February 2004 (*n*=426), such being guarded in the nest by males. Newly-hatched larvae (3.0 mm notochord length) had small yolks and many melanophores on the snout to caudal region. Seventeen days after hatching (4.9 mm standard length), the notochord tip projected upwards, and dorsal and anal fin rays appeared. After 30 (8.5 mm standard length) to 45 days (11.7 mm standard length), the larvae settled to the bottom. Larvae and juveniles were able to survive in salinities of 10–20 psu, but quickly succumbed in higher salinities (25–35 psu), such intolerance being a likely factor limiting the spread of *L. pallidus* to off shore and more distant areas.

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Records of telescope fish, *Gigantura indica* (Aulopiformes: Giganturidae), around Japan

Shinichi Tomiyama, Atsushi Fukui, Yasuyuki Kitagawa and Muneo Okiyama

Abstract One adult (184.1 mm in standard length) and three postflexion larvae (9.9–18.1 mm in standard length) of the telescope fish, *Gigantura indica* Brauer, 1901, which has not previously been treated as Japanese fishes, were collected off south-east Kyusyu and east of Boso Peninsula, respectively. Descriptions based on these specimens are provided and a new Japanese name for the species proposed. *Gigantura indica* is distinguishable from the only other confamilial species (*Gigantura chuni* Brauer, 1901) by the numbers of anal fin (11–14) and pectoral fin rays (36–43), and several body proportions (e.g., caudal peduncle depth). The above specimens are the northernmost records of *G. indica* from the western North Pacific. The occurrence of postflexion larvae from east of Boso Peninsula (Kuroshio Extention region) is a firm indication that the species reproduces in waters associated with the Kuroshio Current.

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Records of the pipefish *Dunckerocampus naia* (Gasterosteiformes: Syngnathidae) from Japan

Yohko Takata, Koichi Shibukawa and Gento Shinohara

Abstract One specimen of the pipefish *Dunckerocampus naia* Allen and Kuiter, 2004, hitherto recorded only from the tropical region of the Western Central Pacific and Andaman Sea, was collected from the interstices of a precipitous reef at 16 m depth off Amami-oshima Island, Ryukyu Islands, Japan. Although the specimen represents the first voucher surpported record for this species from Japan, examination of the Image Database of Fishes in the Kanagawa Prefectural Museum of Natural History revealed that *D. naia* is infact widely distributed in the Kuroshio Current region.

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