Papers Published in *Japanese Journal of Ichthyology*

Vol. 59, No. 2 November 5, 2012

CONTENTS

Full Papers

Involvement of olfaction in spawning success of medaka *Oryzias latipes*
Youichi Hayakawa, Shinpei Takita, Kazuya Kikuchi, Ayaka Yoshida and Makito Kobayashi

First Japanese record of an engraulid fish, *Encrasicholina devisi* (Clupeiformes), collected from Kagoshima Prefecture, southern Japan and comparisons with congeners
Harutaka Hata, Hiroyuki Motomura and Hiro Ishimori

Short Reports

First record of an ophidiid fish, *Brotulotaenia nielseni* (Ophidiiformes: Ophidiidae), collected from Japanese waters
Shinpei Ohashi, Hisashi Imamura and Mamoru Yabe

Records and possible population establishment of the non-indigenous bagrid catfish *Pseudobagrus fulvidraco* in Lake Kasumigaura, Ibaraki Prefecture
Kazunori Arayama, Shin-ichiro S. Matsuzaki, Katsuo Mashiko, Tomiji Hagiwara, Takahiro Morosawa, Kouki Kanou and Katsutoshi Watanabe

Occurrence and spawning locations of the Itasenpara bitterling (*Acheilognathus longipinnis*) in the Moo River, Toyama, Japan
Masaki Nishio, Taha Soliman and Yuji Yamazaki

Records of *Stegastes insularis* (Perciformes, Pomacentridae) from Yoron-jima Island, the Amami Islands, Kagoshima Prefecture, Japan, and notes on distributional implications for the species
Hajime Nishiyama, Mikio Watai, Hiroshi Senou and Hiroyuki Motomura

Full Papers

Japanese Journal of Ichthyology

Vol. 59, No. 2, pp. 111−124

Involvement of olfaction in spawning success of medaka *Oryzias latipes*

Youichi Hayakawa, Shinpei Takita, Kazuya Kikuchi, Ayaka Yoshida and Makito Kobayashi

Abstract The importance of olfaction in spawning of medaka *Oryzias latipes* was established for the first time by observation of spawning behavior by fish subjected to an olfactory blockage. Experimental fish were prepared by (1) covering the nostrils on both sides (bilateral treatment), thereby excluding all olfactory stimuli, and (2) covering nostrils on one side only (unilateral treatment), thereby giving partial exclusion. A control group comprised untreated (intact). Experiments conducted for both males (bilateral male-intact female, unilateral male-intact female and intact male-intact female) and females (bilateral female-intact male, unilateral female-intact male and intact female-intact male) resulted in no spawning by intact females paired with bilateral males, whereas spawning occurred in intact females paired with both unilateral and intact males. Spawning also occurred when intact males were paired with intact, unilateral or bilateral females, indicating that olfactory stimuli were necessary for males to complete spawning, but not so for females. Spawning acts exhibited from pairing started by bilateral males-intact female pairs included “following” (initial act of following female), “positioning” (lateral courtship display), and “quick circle” (turning in front of female), but they did not include “contact” (bodies in contact posteriorly prior to gamete release), “wrapping” (male embracing female using their dorsal and anal fins during gamete release). On the other hand, intact and unilateral males participated in all of the above spawning acts, indicating that olfactory stimuli are indispensable for behavior concerning emitting semen.

(Corresponding author: Youichi Hayakawa, Department of Life Science, International Christian University, 3–10–2 Osawa, Mitaka, Tokyo 181–8585, Japan; e-mail:

dragonflytonda@kd5.so-net.ne.jp)

Japanese Journal of Ichthyology
Vol. 59, No. 2, pp. 125–134

First Japanese record of an engraulid fish, *Encrasicholina devisi* (Clupeiformes), collected from Kagoshima Prefecture, southern Japan and comparisons with congeners

Harutaka Hata, Hiroyuki Motomura and Hiro Ishimori

Abstract A single specimen of an engraulid fish, *Encrasicholina devisi* (Whitley, 1940) was collected from Uchinoura Bay, Kagoshima Prefecture, southern Japan, in January 2011. The previously reported northernmost record of the species being as Taiwan, the Kagoshima specimen is described here as the northernmost (and first Japanese) record known of *E. devisi*. Although the species is similar to *E. heteroloba* in having the maxilla posteriorly reaching to the subopercle, differences between the species have been unclear, due to a lack of detailed comparisons. Comparisons of *E. devisi* with *E. heteroloba* based on 29 and 32 specimens, respectively, from the Indo-West Pacific revealed the former to have 3 unbranched rays in the dorsal and anal fins [vs. 2 or (rarely) 1 in *E. heteroloba*]. *Encrasicholina devisi* also differs from *E. heteroloba* in having relatively fewer gill rakers: 36–46 (mode 40) on the first gill arch [vs. 44–51 (46)], 30–37 (34) on the second gill arch [vs. 33–42 (38–40)], 15–22 (19) on the fourth gill arch [vs. 19–25 (21)] and 3–7 (6) on the posterior face of the third gill arch [vs. 5–8 (7)]. Morphometrically, *E. devisi* is separable from *E. heteroloba* in head length [25.8–27.5% (mean 26.7%) of standard length vs. 22.8–25.5% (24.3%)], first unbranched dorsal-fin ray length [0.4–1.8% (1.0%) vs. 4.1–7.7% (5.6%)], second unbranched dorsal-fin ray length [5.3–7.5% (6.7%) vs. 12.3–15.2% (13.5%)], first unbranched anal-fin ray length [0.3–2.1% (1.0%) vs. 2.5–5.0% (3.6%)] and second unbranched dorsal-fin ray length [2.3–4.9% (3.9%) vs. 7.3–11.0% (9.6%)], and in having the third or fourth soft ray in the dorsal fin longest (vs. second to fourth), and third to fifth soft ray in the anal fin longest (vs. second or third).

(Corresponding author: Hiroyuki Motomura, The Kagoshima University Museum, 1–21–30 Korimoto, Kagoshima 890–0065, Japan; e-mail: motomura@kaum.kagoshima-u.ac.jp)

Short Reports

Japanese Journal of Ichthyology

Vol. 59, No. 2, pp. 135–139

First record of an ophidiid fish, *Brotulotaenia nielseni* (Ophidiiformes: Ophidiidae), collected from Japanese waters

Shinpei Ohashi, Hisashi Imamura and Mamoru Yabe

Abstract Three specimens (191–247 mm in standard length) of a meso/bathy-pelagic ophidiid, *Brotulotaenia nielseni* Cohen, 1974, collected off Miyagi Prefecture and near the Ogasawara Islands, southern Japan, represent the first records of the genus *Brotulotaenia* from Japanese waters. *Brotulotaenia nielseni*, which can be distinguished from the other three species of the genus (*B. brevicauda, B. crassa* and *B. nigra*) on the basis of several meristic and proportional characters, including dorsal fin rays (85–101), total vertebrae (68–76) and preanal length (36.5–47.4% SL), was previously known from the western and mid (Hawaii) Pacific Ocean, and the western Indian Ocean.

(Corresponding author: Shinpei Ohashi, Chair of Marine Biology and Biodiversity (Systematic Ichthyology), Graduate School of Fisheries Sciences, Hokkaido University, 3–1–1 Minatocho, Hakodate, Hokkaido 041–8611, Japan; e-mail: shin-ohashi@fish.hokudai.ac.jp)

Japanese Journal of Ichthyology

Vol. 59, No. 2, pp. 141–146

Records and possible population establishment of the non-indigenous bagrid catfish *Pseudobagrus fulvidraco* in Lake Kasumigaura, Ibaraki Prefecture

Kazunori Arayama, Shin-ichiro S. Matsuzaki, Katsuo Mashiko, Tomiji Hagiwara, Takahiro Morosawa, Kouki Kanou and Katsutoshi Watanabe

Abstract Eight specimens (28.2–170.2 mm SL) of the non-indigenous bagrid catfish *Pseudobagrus fulvidraco* were collected from the Lake Kasumigaura system, Ibaraki Prefecture, central Japan, during December 2008 and November 2011. Three juvenile

specimens of this invasive species indicated successful reproductive activity in the lake system. The species is known to have similar morphological and food habits to channel catfish *Ictalurus punctatus*, which has also invaded Lake Kasumiguara, causing damage to the ecosystem and problems for local fisheries. The establishment and future habitat expansion of *P. fulvidraco* would also cause serious ecological and economic problems.

(Corresponding author: Kazunori Arayama, Ibaraki Prefectural Fisheries Research Institute, Freshwater Fisheries Branch, 1560 Ko, Tamatsukuri, Namegata, Ibaraki 311–3512, Japan; e-mail: k.arayama@pref.ibaraki.lg.jp)

Japanese Journal of Ichthyology

Vol. 59, No. 2, pp. 147–153

Occurrence and spawning locations of the Itasenpara bitterling (*Acheilognathus longipinnis*) in the Moo River, Toyama, Japan

Masaki Nishio, Taha Soliman and Yuji Yamazaki

Abstract To clarify the distribution during spawning and spawning habitat of Itasenpara bitterling (*Acheilognathus longipinnis*), one of the most endangered freshwater fish species in Japan, the habitats of mature individuals and freshwater mussels (*Unio douglasiae nipponensis*) were investigated in the Moo River (Himi City, Toyama Prefecture, Japan) in relation to environmental factors during the fall and winter seasons in 2010. Mussel density-influenced sex ratios of bitterling varied in the study area, males remaining in areas of high mussel density during spawning, while females frequented deeper feeding grounds until their eggs had matured.

(Corresponding author: Masaki Nishio, Board of Education Himi City, 4–9 Honmachi, Himi, Toyama 935–0016, Japan; masaki.nishio@city.himi.lg.jp)

Vol. 59, No. 2, pp. 155–162

Records of *Stegastes insularis* (Perciformes, Pomacentridae) from Yoron-jima Island, the Amami Islands, Kagoshima Prefecture, Japan, and notes on distributional implications for the species

Hajime Nishiyama, Mikio Watai, Hiroshi Senou and Hiroyuki Motomura

Abstract Seven specimens (21.3–52.3 mm standard length) of the damselfish *Stegastes insularis* Allen and Emery, 1985, collected from Yoron-jima Island, the Amami Islands, Kagoshima Prefecture, Japan, are described in detail. A review of distributional records in Japanese waters, based on specimens, literature records, and underwater photographs, revealed the species to be distributed mainly in the Ogasawara, Izu and Ryukyu islands. On the basis of an underwater photograph, Kushimoto, Kii Peninsula, Wakayama Prefecture, is regarded as the northernmost record of the species, although it is not considered to reproduce in that area. The occurrence of *S. insularis* at Minamitori-shima Island appears to have resulted from dispersal from the northern Ogasawara Islands where the species commonly occurs. Known localities of the species, viz., Japan, Taiwan and Christmas Island, and the lack of records from Micronesia and Southeast Asia suggest that the population of Christmas Island is relictual.

(Corresponding author: Hajime Nishiyama, The Kagoshima University Museum, 1–21–30 Korimoto, Kagoshima 890–0065, Japan; e-mail: hnishiyama_damselfish@yahoo.co.jp)