

Three Species of *Dactylogyrus* (Monogenea: Dactylogyridae) Parasitic on Japanese Seabass *Lateolabrax japonicus* (Perciformes: Lateolabracidae) in Japan, with New Country Records for *Dactylogyrus gotoi* and *Dactylogyrus kikuchii*

Masato Nitta^{1,2} and Kazuya Nagasawa¹

¹ Graduate School of Biosphere Science, Hiroshima University, Kagamiyama 1-4-4, Higashi-Hiroshima, Hiroshima 739-8528, Japan
E-mail: licht.bsn.mono@gmail.com (MN)

² Corresponding author

(Received 13 June 2013; Accepted 27 February 2014)

Three species of *Dactylogyrus* Diesing, 1850 (*D. inversus* Goto and Kikuchi, 1917, *D. gotoi* Gussev, 1967, and *D. kikuchii* Gussev, 1967) were collected from the gills of Japanese seabass *Lateolabrax japonicus* (Cuvier, 1828) in two brackish-water lakes (Lake Nakaumi and Lake Shinji) in Shimane Prefecture, Japan. These collections represent the first records of *D. gotoi* and *D. kikuchii* from Japan. Although these two dactylogyrids were originally described from a fish reported as "*Lateolabrax japonicus*" in China, the latter appears to be a different species, *L. maculatus* (McClelland, 1844), which has been recently recorded as an introduced species in Japan.

Key Words: *Dactylogyrus*, Monogenea, fish parasite, *Lateolabrax japonicus*, new records, host identification.

Introduction

The Japanese seabass *Lateolabrax japonicus* (Cuvier, 1828) (Perciformes: Lateolabracidae) is one of the most important commercial fishes in coastal waters of Japan (Shoji *et al.* 2002). The monogenean fauna of this fish is poorly known in this country, where only three species have been reported: *Dactylogyrus inversus* Goto and Kikuchi, 1917 [syn.: *Microncotrematoides inversum* (Goto and Kikuchi, 1917) Yamaguti, 1963 and *Microncotrema lateolabracis* Yamaguti, 1958: for synonymy, see the Results and Discussion], *Microcotyle suzuki* Ishii and Sawada, 1938 [generic name misspelled as *Microcotyla* in Ishii and Sawada (1938a)], and *Geneticoenteron lateolabracis* Yamaguti, 1958 (Goto and Kikuchi 1917; Ishii and Sawada 1938a, 1938b; Yamaguti 1938, 1958, 1963).

Recently, the spotted sea bass *Lateolabrax maculatus* (McClelland, 1844), which is morphologically and genetically distinct from *L. japonicus* (Yokogawa and Seki 1995; Yokogawa *et al.* 1996; Yokogawa 2002, 2013), was introduced to western Japan from China for aquaculture (Matsuoka 1993; Hatooka 2002b). It has escaped from culture cages and spread to some Japanese coastal waters (Ui 1998; Hirota *et al.* 1999; Wakabayashi and Nakamura 2003; Iseki *et al.* 2010). The myxozoan *Henneguya lateolabracis* Yokoyama, Kawakami, Yasuda and Tanaka, 2003, which caused fish mortalities, was found in *L. maculatus* immediately after this fish had been brought to Japan (Yokoyama *et*

al. 2003). Several other parasites, including protistans and monogeneans, were reported from later-arriving fish from China (Mizuno 2006). Under these circumstances, it is important to clarify the original parasite fauna of *L. japonicus* in Japan before *L. maculatus* becomes widely established. In this paper, the monogenean fauna of *L. japonicus* is examined using material from two brackish-water lakes, Lake Nakaumi and Lake Shinji, in Shimane Prefecture, Japan. In these lakes, *L. maculatus* has not yet been found despite intensive surveys of the fish fauna (Koshikawa 1997, 2002; Nakamura 2007).

Materials and Methods

Two and 10 specimens, respectively, of *L. japonicus* (standard length: 220–225 [mean: 222.5] and 135–204 [158.5] mm) were collected by set nets in Lake Nakaumi (35°28'N, 133°08'E) on 26 July 2012 and Lake Shinji (35°26'N, 132°57'E) on 9 January 2013. These are brackish-water lakes in the Hii River system of Matsue, Shimane Prefecture, Japan. The fish were killed by icing and brought to the laboratory. Gills were removed and examined under an Olympus SZ61 dissecting microscope. Some monogeneans were collected from the gills by using small needles and forceps, fixed in 70% ethanol under a coverslip, and stained with Heidenhain's iron haematoxylin (Kuramochi 2003); others were fixed in ammonium picrate glycerin slightly pressed under coverslips (Lim 1991). The later specimens were de-