Caligus macarovi Gusev, 1951 (syn.: Caligus fulvipurpureus Shiino, 1954) is a caligid copepod parasitic on the body surface of marine teleosts in the northern Pacific and its marginal seas (Cressey & Cressey, 1980; Nagasawa, 1984; Nagasawa et al., 2010). This species has been well documented as a parasite of Pacific saury (Cololabis saira Brevoort, 1856) caught in the North Pacific (Shiino, 1954, 1956; Hotta, 1962; Kurata, 1964; Sokolovskii, 1969; Baeva, 1970; Kazachenko et al., 1972; Hughes, 1973; Nagasawa, 1984; Kabata, 1988; Yamaguchi & Honma, 1992; Natsume, 2007; Natsume et al., 2009), the Sea of Japan (Gusev, 1951; Nishimura, 1964; Kim, 1998) and the Sea of Okhotsk (Yamaguchi & Honma, 1992). It also has been found on some other fishes, including bullet tuna (Auxis rochei rochei Risso, 1810), recorded as Auxis maru Kishinouye, 1915), Japanese pufferfish (Takifugu rubripes (Temminck & Schlegel, 1850), recorded as Sphaeroides rubripes (Temminck & Schlegel, 1850)) and Arctic rainbow smelt (Osmerus mordax dentex Steindachner & Kner, 1870, recorded as Osmerus eperlanus dentex Steindachner & Kner, 1870) from Russia (Gusev, 1951), big-scaled redfin (Tribolodon hakonensis Günther, 1877) from Korea (Kim, 1998) and black skipjack (Euthynnus lineatus Kishinouye, 1920) from Mexico (Shiino, 1959). Additionally, there is a record of C. macarovi as a marine plankton organism sampled off San Francisco, California (Heegaard, 1972).

Pacific bluefin tuna (Thunnus orientalis (Temminck & Schlegel, 1844)) are currently cultured in coastal waters of Japan. Recently, two ovigerous female specimens of C. macarovi were collected from a cage-cultured T. orientalis. This is the first record of this parasitic copepod from T. orientalis farmed in Japan.

A single specimen of T. orientalis (1798 g in body weight) was sampled on 8 February 2011 from a floating cage in the western North Pacific off Kumano.
in Mie Prefecture, central Japan. The fish was immediately examined there, and copepods taken from its body surface were fixed in 10% formalin and then preserved in 70% ethanol. They were soaked in lactophenol and examined using the wooden slide procedure of Humes & Gooding (1964). Copepod specimens are deposited in the crustacean collection at the National Museum of Nature and Science, Tokyo (NSMT-Cr 21488). The English and scientific names of fishes follow Froese & Pauly (2010).

The two copepod specimens, 5.27-5.35 mm long (excluding the setae on the caudal rami), fit well with the description of *C. macarovi* given by Gusev (1951) and Shiino (1954, 1956, 1959), thus, there is no need to describe them herein. The fish examined in this study was one of those that had been cultured in the floating cage since October 2010 when they were transported from sea cages in the western North Pacific off Kochi Prefecture, where they were caught in July-August 2010. It is likely that the fish got infected in the floating cage, because *Cololabis saira* migrates abundantly to the waters off Kumano from November to April (Kosaka & Tanno, 1984) and infective larvae produced from *C. macarovi* infecting this fish species are considered to be numerous there. The sampling locality (Kumano) in this study is near Owase where Shiino (1954, 1956) collected *Caligus fulvipurpureus* (= *C. macarovi*).

*Thunnus orientalis* is a new host for *C. macarovi*. This copepod species appears to prefer *Cololabis saira*, but its host specificity is not strict: it is now known to occur on seven species of actinopterygian teleosts, which belong to five families (Cyprinidae, Osmeridae, Scomberesocidae, Scombridae, Tetraodontidae) in five orders (Cypriniformes, Osmeriformes, Beloniformes, Perciformes, Tetraodontiformes).

REFERENCES


