First Record of *Nerocila bivittata* (Cymothoidae, Isopoda) on Greater Weever (*Trachinus draco*) in the Worldwide

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Greater weever (*Trachinus draco*) have a wide distribution range. *Nerocila* species were reported from many fish in the areas, but did not receive any record of the greater weever. *Nerocila bivittata* was reported the first time from the greater weever (*Trachinus draco*) in the worldwide in the present study.

Crustacean parasites constitute about 25% of marine fish parasites and commonly they are represented by Copepods, Brachyura and Isopod (Eiras et al., 2000). The majority of parasitic isopods consist of members of Cymothoidae, Gnathiidae and Bopyridae families (Lester, 2005). *Nerocila* is a large genus of the family Cymothoidae and living 150 million years include at least 65 species living attached on the skin or on the fins of cultured and wild fish (Bragoni et. al., 1983; Sarusic, 1999; Rameshkumar et al., 2013; Nagler et. al., 2016). However, four species of *Nerocila* (*N. acuminata*, *N. bivittata*, *N. maculata* *N. orbignyi*) have been reported from many wild fish in Turkey (Table 1).

The systematic description of the nerocila is as follows:

Kingdom: Animalia  
Phylum: Arthropoda  
Subphylum: Crustacea  
Class: Malacostraca  
Order: Isopoda  
Family: Cymothoidae  
Genus: *Nerocila*

The greater weever (*Trachinus draco*) is poisonous marine fish that it is distributed in many regions such as eastern Atlantic, Canary Islands, Aegean, Mediterranean and Black Sea (Slastenenko, 1956; Whitehead et. al., 1984; Turan, 2007). The fish living generally on the bottoms of the sea at the deeper ranges 15 to 150 m depth (Froese and Pauly, 2007). It's reproduction time is June to August (Muus and Nielsen, 1999) and maximum length is 37.6 cm (Bagge, 2004). Growth and reproduction of the greater weever was reported by Ak and Genç (2013) from the eastern coast of the Black Sea but there are a few paper in the coast of Turkish sea deal with pathogens of the fish. Fish parasites reported from *T. draco* in Turkish seas as follows; Cymothoid parasites *Anilocra physodes* (Trilles, 1994), *Contracaecum fabri* (Nematoda), *Helicometra fasciata* (Digenea), *Botriocephalus scorpii* (Cestoda), *Aspinatrium trachini* (Monogenea) and *Stibobdella loricata* (Hirudinea) (Akmirza, 2004). *Nerocila bivittata* was reported for the first time from the greater weever (*Trachinus draco*) in the worldwide in the present study.
The samples of *Trachinlus draco* (Linneus, 1758); were captured by gill net (depth 40m) from the Rize coasts of the eastern Black Sea (41°, 11′, 30° N and 40°, 59′, 20° E) on May 2016 (Fig. 1).

A total of twenty four *T. draco* were sampled. Sampled fish were identified according to Turan (2007). Fish were examined for the external crustacean parasites and then the parasite was fixed in 70% alcohol. Stereomicroscope was used for determination of morphological characteristics of the parasites and these characters were used for the description of parasites (Williams and Williams, 1978; Kabata, 1979; Brusca, 1981; Kabata, 1992; Masahiro and Ho, 2013).

*Nerocila bivittata* was observed from the external surfaces of the one fish in the sampled fish (Fig.2).
The parasite was not observed on the other samples. Total length and width of the parasites were 23 mm and 9.2 mm respectively. And also coxal plates of the parasite reaching to posterior margin of their preonites. Sixth preonite of the parasite was observed as the largest preonite.

The species of Nerocila have been reported by many scientists from many fish from around the world but there is any record from the the greater weever (Ramdane et. al., 2007; Dolfulus and Trilles, 1976; Marques et. al., 2005; Thorsen and Trilles, 2002; Öktener et. al., 2010).
Only *Anilocra physodes* was reported as an isopod parasite from *Trachinus draco* (Trilles, 1994). Akmirza, (2004) examined total of 87 greater weevers (*Trachinus draco*) from the Aegean Sea for parasitic pathogens. In the study, Nematoda, Monogenea, Cestoda, Hirudinea and Digenea species were found, but there was no evidence of crustacean parasite. Curustacean fish parasites of Eastern Black Sea coast in Turkey were reported by Er and Kayiş, (2015) and Kayiş and Ceylan (2011).

*Nerocila acuminata*, *Nerocila bivittata* and *Nerocila orbignyi* were reported from the twelve different fish species (*Pegusa nasuta, Scorpena porcus, Symphodus sp.*, *Uranoscopus scaber, Belone belone, Dicentrarchus labrax, Gobius niger, Hippocampus guttulatus, Neogabius melanostomus, Platichthys flesus, Scophthalmus maximus, Syngnathus sp.*). The present study provides the first *Nerocila bivittata* record for the greater weever (*Trachinus draco*) for the Turkish Sea and worldwide.

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References


