

**First Record of *Nerocila bivittata* (Cymothidae, Isopoda) on Greater Weever  
(*Trachinus draco*) in the Worldwide****Şevki KAYIŞ\*, Akif ER**

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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. orbigny*) 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 fallows; Cymothoid parasites *Anilocra physodes* (Trilles, 1994), *Contracecum fabri* (Nematoda), *Helicometra fasciata* (Digenea), *Botriocephalus scorpii* (Cestoda), *Aspinatrium trachini* (Monogenea) and *Stibarobdella loricata* (Hirudinea) (Akmirza, 2004). *Nerocila bivittata* was reported for the first time from the greater weever (*Trachinus draco*) in the world wide in the present study.

**Table 1.** Species of *Nerocila* reported from marine fish of Turkey

Parasite	Fish	Sea	References
<i>Nerocila acuminata</i>	<i>Pegusa nasuta</i>		
	<i>Scorpaena porcus</i>	Black sea	Er and Kayış, 2015
	<i>Symphodus</i> sp.		
	<i>Uranoscopus scaber</i>		
	<i>Belone belone</i>	Black sea	Er and Kayış, 2015
	<i>Dentex macrophthalmus</i>	Aegean Sea	Kırkım et al., 2008
	<i>Dicentrarchus labrax</i>	Black sea	Er and Kayış, 2015
	<i>Gobius niger</i>	Aegean Sea,	Kırkım et al., 2008;
		Black sea	Er and Kayış, 2015
	<i>Hippocampus guttulatus</i>	Black sea	Kayış and Er, 2012
	<i>Labrus merula</i>	Aegean Sea	Kırkım et al., 2008
	<i>Neogobius melanostomus</i>	Black sea	Er and Kayış, 2015
	<i>Pagellus</i> sp.	Marmara	Demir, 1952
	<i>Pagellus erythrinus</i>	Mediterranean	Monod, 1931
<i>Nerocila bivittata</i>	<i>Parablennius songuinolentus</i>	Black sea	Alaş et al., 2008
	<i>Pegusa nasuta</i>	Black sea	Er and Kayış, 2015
	<i>Platichthys flesus</i>	Black sea	Er and Kayış, 2015
	<i>Sciaena umbra</i>	Aegean Sea	Kırkım et al., 2008;
	<i>Scophthalmus maximus</i>	Black sea	Er and Kayış, 2015
	<i>Scorpaena porcus</i>	Black sea	Er and Kayış, 2015
	<i>Scorpaena scrofa</i>	Aegean Sea	Öktener et al., 2010
	<i>Sparus auratus</i>	Aegean	Kırkım, 1998
	<i>Symphodus</i> sp.	Black sea	Er and Kayış, 2015
	<i>Symphodus tinca</i>	Black sea,	Oğuz and Öktener, 2007
		Aegean Sea	Kırkım et al., 2008
	<i>Syngnathus</i> sp.	Black sea	Kayış and Er, 2012
	<i>Uranoscopus scaber</i>	Black sea	Er and Kayış, 2015
	<i>Nerocila maculata</i>	<i>Not identified</i>	Mediterranean
<i>Dicentrarchus labrax</i>		Aegean	Horton and Okamura, 2001
<i>Nerocila orbigny</i>	<i>Liza aurata</i>	Black sea	Öktener and Trilles, 2004
	<i>Serranus cabrilla</i>	Mediterranean	Özcan et al., 2015
	<i>Solea solea</i>	Black sea	Kayış and Ceylan, 2011
<i>Nerocila</i> sp.	<i>Diplodus puntazzo</i>		
	<i>Mullus barbatus</i>		
	<i>Pegusa nasuta</i>	Black sea	Er and Kayış, 2015
	<i>Sciaena umbra</i>		
	<i>Symphodus</i> sp.		
	<i>Syngnathus</i> sp.		

The samples of *Trachinus draco* (Linnaeus, 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).

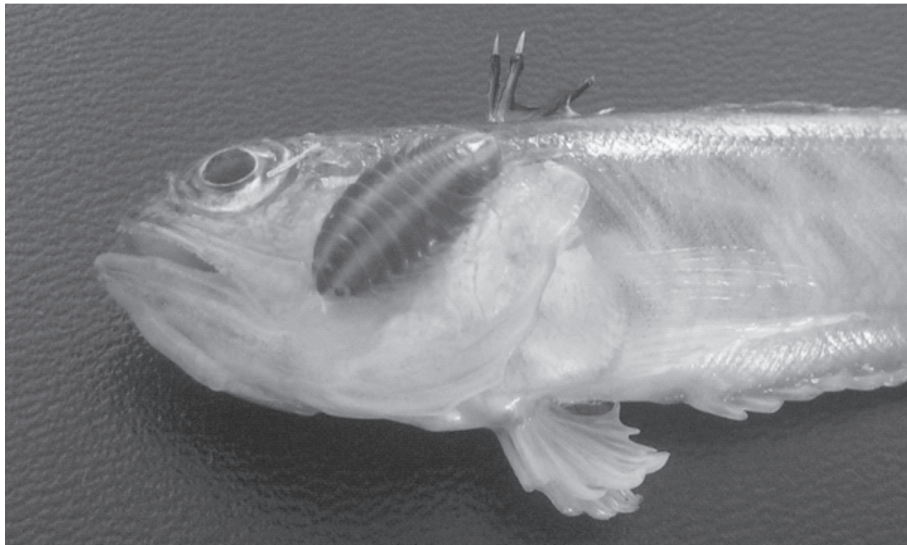
A total of twenty four *T. draco* were sampled. Sampled fish were identified according to Turan (2007). Fish were examined for the external crustacean parasites and then the parasite was fixed in 70% alcohol. Stereomic-

roscope 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).



**Fig.1.** Sampling area, shown with an asterisk, (The map was modified from the site of [www.cografi.net](http://www.cografi.net)).



**Fig. 2.** *Nerocila bivittata* on the external surfaces (operculum) of the greater weever (*Trachinus draco*) (scala bar 0.5 cm).

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; Dollfus 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. Crustacean fish parasites of Eastern Black Sea coast in Turkey were reported by Er and Kayış, (2015) and Kayış and Ceylan (2011).

*Nerocila acuminata*, *Nerocila bivittata* and *Nerocila orbigny* were reported from the twelve different fish species (*Pegusa nasuta*, *Scorpena porcus*, *Symphodus* sp., *Uranoscopus scaber*, *Belone belone*, *Dicentrarchus labrax*, *Gobius niger*, *Hippocampus guttulatus*, *Neogobius 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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