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Mothocya epimerica Costa,1851 (Flabellifera: Cymothoidae), an isopod parasite in the branchial cavities of the Black Sea Silverfish *Atherina boyeri* Risso,1810 (Perciformes, Atherinidae)

Karadeniz Gümüşbalığı *Atherina boyeri* Risso,1810 (Perciformes, Atherinidae)'nin solungaç boşluklarında rastlanan parazit bir isopod, *Mothocya epimerica* Costa,1851 (Flabellifera: Cymothoidae)

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Abstract

A new record of parasitic isopod for the Turkish Fauna, *Mothocya epimerica* Costa, 1851 (Flabellifera: Cymothoidae) is reported from silverfish *Atherina boyeri* in the Black Sea. The female isopod settles on the fish's branchial cavities. The characteristic features of *Mothocya epimerica* Costa, 1851 are given for the first time based on the drawings made from collected specimens.

Keywords: Cymothoid, Parasitic Isopod, *Mothocya epimerica*, *Atherina boyeri*, Black Sea

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Introduction

Parasitic isopods are like the common group of crustacean ectoparasites of fish in marine ecosystem. Cymothoid flabelliferans are hermaphroditic isopods with a shortphase as free-living, planctonic organisms (Colorni *et al.*, 1997). Upon finding a suitable host, they initiate their parasitic life feeding on blood and tissues. The host, *Atherina boyeri* has little or no commercial value, but is an important food for larger predators.

Material and Methods

The fish were captured at the breakwater site of Sinop Peninsula coasts (42° 01′ N and 35° 09′ E) used by fishing line and scoop net. In this region, there are cages where rainbow trout *Oncorhyncus mykiss* Walboum, 1792 are commercially reared. Perhaps, silverfish *Atherina boyeri* was one of many species of feral fish attracted to the raft by the abundance of waste feed that disperse outside the cages of the cultured fish. Water temperature in this region fluctuates between 6-11.9 C° in winter and 17-24.6 C° in summer and salinity 16-18 ppt all year round (Türkoğlu, 1998). A total of 50 *Atherina boyeri* were examined. Isopods are collected from branchial cavities of fish by pens. It was observed that they were active after having been separated from their hosts. The specimens were preserved in 70 % alcohol were transported back to the laboratory at Sinop. Identification was made under the light of binocular microscope. In addition the detailed morphological features of species were given with drawing. The terminology and identification of specimens are those used by Trilles (1968).

Results and Discussion

It's observed parasites are only located in branchial cavities in examining on total 50 silverfish *Atherina boyeri*. The obtained total 10 parasites are consist of female specimens. Knowledgements and figures about this parasite are as follows:

There are three different stages in their life cycle. These are pullus primus, pullus secundus and adult stage (Trilles, 1968). In the stage of pullus primus body is symetric and transparant. In the stage of pullus secundus transparant feature has slightly disappeared. In this stage preipods are six pairs. There is no seventh pair pereipod. The dactylus of all pereipods are crenulate. The anterior of head are rectangular. Propodits are slender (Figure 1).

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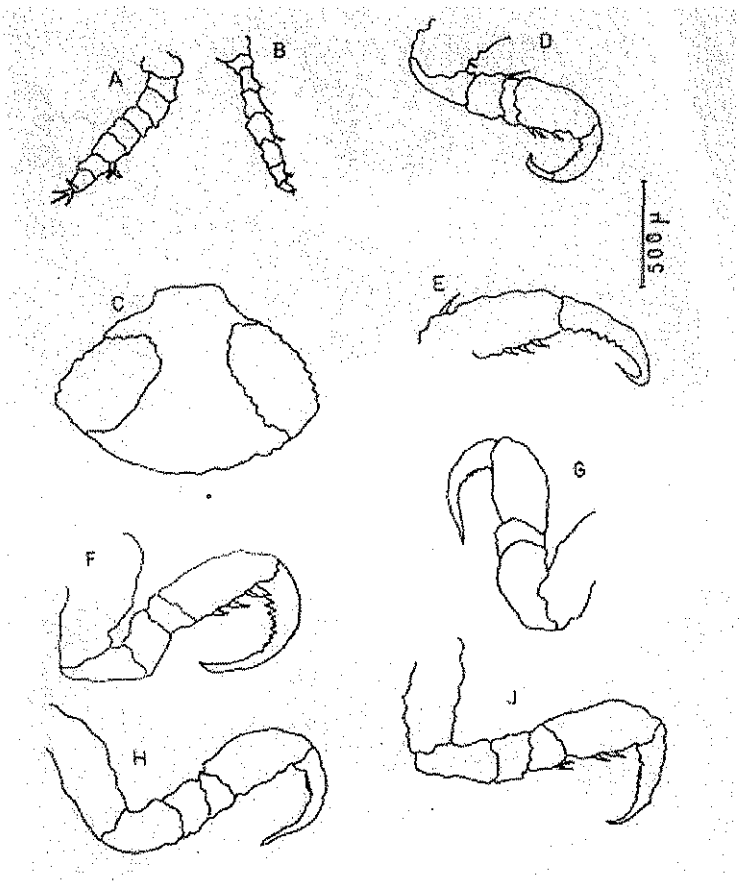

Figure 1. *Mothocya epimerica* Costa,1851 Pullus secundus stage. A, antenna I; B, antenna II; C, head; D, pereopod I; E, pereopod II; F, pereopod III; G, pereopod IV; H, pereopod V; J, pereopod VI.

The maximum lengths of adult females are 13 mm. The body form is very characteristical. The posterior body is convex towards right or left. The eyes are large. Propodits are expanded. The gills are well grown (Figure 2,3). Entire body surface covered with small punctate dots of brown pigment readily visible under lens, lying particularly densely on head and abdomen.

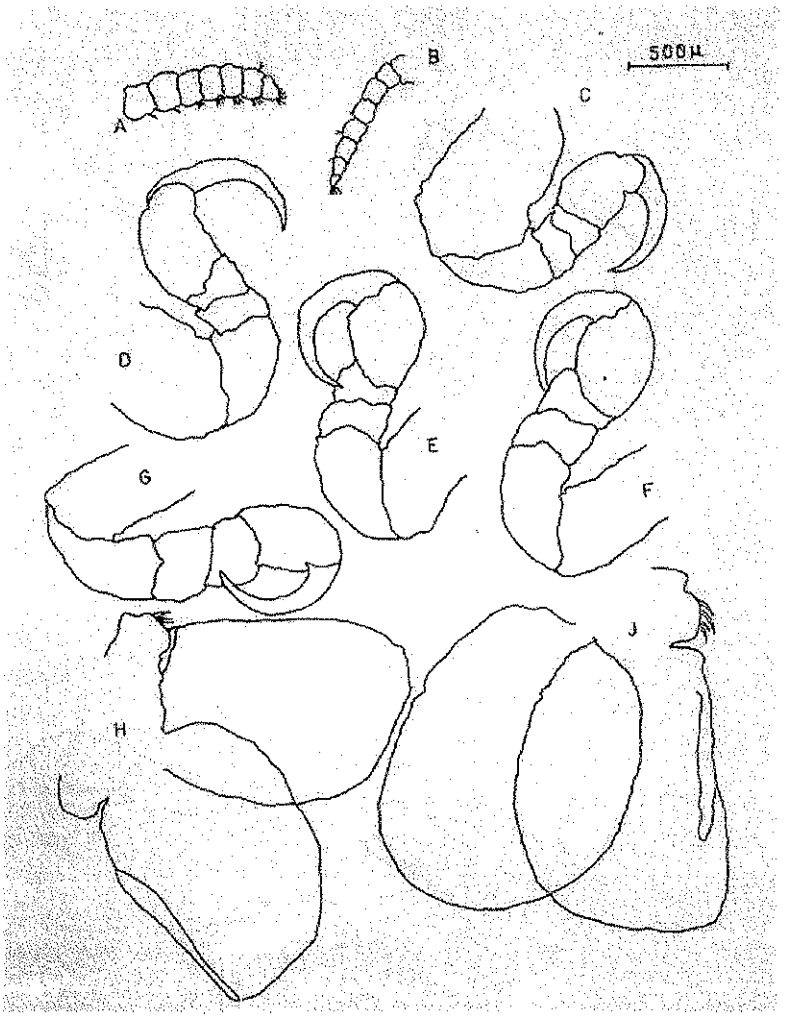

Figure 2. *Mothocya epimerica* Costa, 1851 adult female. A, antenna I; B, antenna II; C, pereopod I; D, pereopod II; E, pereopod V; F, pereopod VI; G, pereopod VII; H, peleopod I; J, peleopod II.

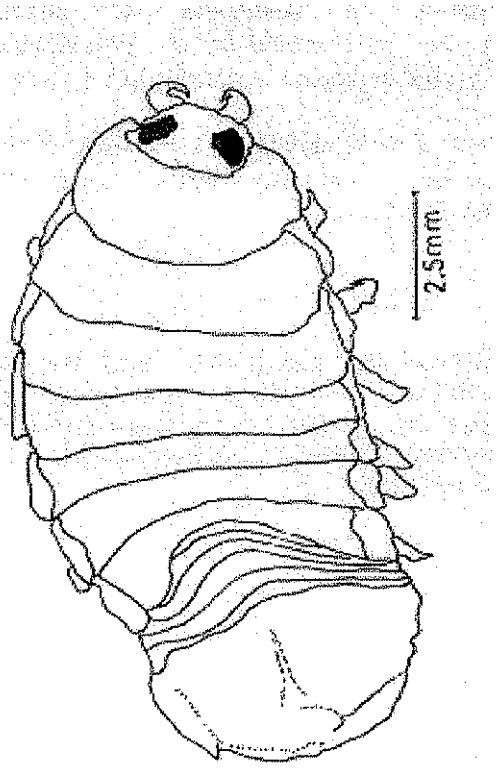

Figure 3. Adult *Mothocya epimerica* Costa, 1851 female dorsal view.

In generally, they distribute in Mediterranean, Black Sea, Adriatic and Atlantic. They especially common on silverfish (Trilles *et al.*, 1989 and Trilles, 1991).It was reported from Romanian Black Sea coasts by Vasiliu (1932) and Chiriac (1977). Kononenko (1988) discussed that seven parasitic isopods including *Mothocya epimerica* from Black Sea originated Atlantic ocean. Investigations concerned with parasitic isopod species in Turkish sea are quite less. *Anilocra physodes* and *Nerocila bivittata* are reported in marmara Sea by Demir (1952). *Anilocra physodes, Nerocila bivittata, Ceratothoa paralella, Bopyrus squillarum, Pleurocrypta microbranchiata, P. longibranchiata, P. porcellanae and P.*

galatheae are reported in Aegean Sea by Geldiay and Kocatat (1972). *Ceratothoa osteroides* are also reported in Antalya coasts of Mediterranean by Trilles (1977) and around Gökçeada by Akmirza (1998). *Anilocra physodes, Nerocila bivittata, Emetha audouinii, Meinertia paralella, M. oestroides, M. capri, Pleurocrypta microbranchiata, P. longibranchiata, P. porcellanae and Bopyrus squillarum* are reported in Aegean Sea by Kırkım (1998).

Finally, the capture of these specimens represents the first record of this species in Turkish sea. In this study, *Mothocya epimerica* is reported for the first time in the Turkish seas.

Özet

Türkiye faunası için yeni kayıt parazitik bir isopod olan *Mothocya epimerica* Costa, 1851 (Flabellifera: Cymothoidae) Karadeniz'de gümüşbalıklarında (*Atherina boyeri* Risso, 1810) rapor edilmiştir. Dişi isopodlar balıkların solungaç boşluklarına yerleşmiştir. *Mothocya epimerica* Costa, 1851 nın karakteristik özellikleri çizimlerle verilmiştir.

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