

1 **Full title: First checklist triggering the inventory of marine fish ectoparasites in the**  
2 **Syrian coast (Eastern Mediterranean)**

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17 **Key words: Checklist; Fish Ectoparasites; Mediterranean; Syria**

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**18 Abstract**

19 The checklist of the ectoparasites of Syrian marine fish is provided. This fauna comprises  
20 (28) species, representing (20) genera, (15) families, (9) orders and (8) classes. The checklist  
21 is arranged alphabetically; with additional details for each species include the hosts, infected  
22 site, prevalence and intensity, and references or the source of these data. Considering these  
23 very limited data, we discussed the results found and highlighted the importance to conduct  
24 more parasitological studies in the region.

**25 Introduction**

26 Parasites checklists are part of the FAO's continuing effort to address the need for  
27 information on the occurrence of diseases and pathogens of aquatic animals. These checklists  
28 are valuable information sources that can be used when conducting pathogen risk analysis, an  
29 essential component of strategies on aquatic animal health management (Kirjušina and  
30 Vismanis, 2007).

31 Studies concerning parasites of marine fish in Syria (Eastern Mediterranean) are very scarce  
32 comparing to countries of Western Mediterranean. Actually, these studies have a short  
33 history, in 2010, we initiated in this "*ignored region*" the original study and we described  
34 some ectoparasites in three marine fish species for the first time in the Syrian marine waters  
35 (Hassan *et al.*, 2010). Our idea of that founded study was to explore the adaptation extent of  
36 parasitic fauna of lessepsian fish species in the new habitat in this part of Mediterranean Sea.

37 Syria is located on the east coast of the Mediterranean Sea, with a total coastline length of  
38 202 km, expanding from the Turkish borders to Lebanon. Syrian seawaters are characterized  
39 by a low fish species richness as reported by Ali (2018) that found (298) fish species (111  
40 families, 220 genera), which present less than half of the total of 664 for the whole

41 Mediterranean fish fauna. This could be attributed to the limited number of taxonomic  
42 studies, the lack of sampling efficiency of the fishing gears used and that deep-sea species of  
43 this region have not been studied sufficiently.

44 The aim of the present work is to provide a first checklist of ectoparasitic fauna on free-living  
45 marine fish species from the Syrian coast, which have potential to be cultured in Syria in  
46 future. This checklist includes also original data collected during a survey in these waters.

47 Marine fish parasites from Syria are poorly known, especially, because most of articles  
48 including the records of these parasites were published in Arabic with an abstract in English  
49 (e.g., Hassan *et al.*, 2010; Salman *et al.*, 2017; Layka and Saleem, 2020). Consequently,  
50 listing fish ectoparasites recorded in Syrian marine waters comes from the necessity to  
51 highlight their presence and from the need of readily accessible information on these  
52 parasites, their host range as well as their local geographic distribution. These data could be  
53 also interesting to expect the geographic distribution range of these organisms in other  
54 countries around the Mediterranean especially where they are not recorded yet. Therefore, we  
55 have produced this checklist to unify all knowledge into a single source, which would list all  
56 ectoparasites of marine fish recorded to date from Syria. Despite the low number of works on  
57 fish parasites in Syria, this will constitute a baseline and hopefully encourage other studies in  
58 the country. Moreover, because of the uncertainty on several parasite identification that more  
59 studies are argued to be done in the region.

## 60 **Methods**

61 The data are presented as a table compiled from all published and non-published records  
62 accomplished by or known to the authors. The parasites are presented in alphabetical order  
63 under class, genus and species, with records of their hosts, infected site, and data sources. The  
64 species were allocated into major groups (classes) according to the electronic site of World

65 Register of Marine Species (WoRMS, 2022). A total of 19 references (15 research papers and  
66 4 unpublished masters theses) dealing with the parasites of marine fishes of Syria were used  
67 to prepare this checklist. The checklist was in particular focused on the ectoparasites and their  
68 fish hosts. When available, the prevalence (number of infected fish/ total examined fish x  
69 100) and the intensity (number of ectoparasites/ number of infected fish) were also taken into  
70 account.

## 71 **Results and Discussion**

72 This first original checklist of ectoparasites identified on marine fish in Syria from 2010 to  
73 2022 provided by this paper, includes (28) species belonging to (20) genera, (15) families, (9)  
74 orders and (8) classes. They were distributed on (15) fish host species (Tables 1 & 2). These  
75 parasites were allocated into eight classes as follows: one species of each of Malacostraca,  
76 Maxillopoda, Oligohymenophorea, Phyllopharyngea, and Trematoda, three species of  
77 Hexanauplia, and four species of Myxozoa. The class Monogenea included the largest  
78 number of identified parasites with 16 species.

79 Most of these ectoparasites were isolated from the fish gills, excepted *Gnathia sp.* Leach,  
80 1814, *Chilodonella piscicola* Strand, 1928, and *Caligus apodus* (Brian, 1924), which were  
81 isolated from the buccal cavity and skin in addition to gills, as well as, *Caligus pageti*  
82 Russell, 1925, and *Trichodina sp.* Ehrenberg, 1830, which were isolated from the skin of  
83 *Mugil cephalus* Linnaeus, 1758.

84 The infection rate or prevalence varied from very low (0.6%) for the parasite *Microcotyle*  
85 *mugilis* Vogt, 1878 on *Siganus rivulatus* Forsskål & Niebuhr, 1775 gills to very high (88.9%)  
86 on the gills of *Diplodus vulgaris* (Geoffroy Saint-Hilaire, 1817) when infected by  
87 *Lamellodiscus elegans* Bychowsky, 1957. Over all, the prevalence of Monogenea parasites  
88 was the highest. The intensity ranged between (1) parasite/fish for *Ligophorus cephalis*  
89 Rubtsova, Balbuena, Sarabeev, Blasco-Costa & Euzet, 2006 on *Chelon auratus* (Risso, 1810)

90 and for *Choricotyle* sp. Van Beneden & Hesse, 1863 on *Pagellus erythrinus* (Linnaeus,  
91 1758), and (64) parasites/fish for *Trichodina*, on *Mugil cephalus*. The highest infection rates  
92 by the majority of exoparasites species cited in the present checklist were recorded in spring,  
93 whereas the lowest rates were observed in winter.

94 The highest number of ectoparasites was recorded from Sparidae (11 species) followed by  
95 Mugilidae (10), Mullidae and Siganidae (3 species each), Holocentridae (2), and only one  
96 species from each Fistulariidae, Scombridae and Synodontidae.

97 The total number of ectoparasites listed here (28 species) from Syrian marine fish species, is  
98 relatively low comparing to those in other Mediterranean countries. For instance, only for  
99 Monogenea, (141) species were recorded in Italy (Strona *et al.*, 2010), (59) in Turkey (Özer,  
100 2021), and (153) in Tunisia (Derbel *et al.*, 2022), versus (16) species listed in the present  
101 study. In fact, in Turkey, an adjacent country up to 2021, the number of parasites species  
102 reported from marine fishes are (326) at species level and (75) at genus level and these are  
103 belonging to the higher taxa as follows: Ciliophora (19), Myxozoa (3), Monogenea (59),  
104 Trematoda (105), Cestoda (33), Nematoda (36), Arthropoda (89), Cnidaria (35),  
105 Microsporidia (1), Acanthocephala (14), Annelida (5), Mollusca (1) (Özer, 2021). Only seven  
106 similar parasite species belonging to Monogenea: *Kuhnia scombri* (Kuhn, 1829) Sproston,  
107 1945, *Axine belones* Abildgaard, 1794, *Choricotyle* sp., *Grubea cochlear* Diesing, 1858,  
108 *Lamellodiscus elegans*, *Lamellodiscus ignoratus* Palombi, 1943, *Mazocraes* sp. Hermann,  
109 1782, were recorded in both Syrian and Turkish marine waters. These species were isolated  
110 in 14 fish species including only four similar hosts: *Scomber scombrus* Linnaeus, 1758,  
111 *Pagellus erythrinus*, *Boops boops* (Linnaeus, 1758), *Sparus auratus* Linnaeus, 1758 (Table  
112 3).

113 Nonetheless, in Lebanon, another adjacent country, studies of marine fish parasites are very  
114 scarce, and only a preliminary checklist of Cymothoids (Crustacea: Isopoda) has been

115 provided, including three genera (*Anilocra* Leach, 1818, *Nerocila* Leach, 1818 and  
116 *Ceratothoa* Dana, 1852) and seven species (Bariche and Trilles, 2005). Although, similar fish  
117 species were studied, no similar parasite species in Syrian and Lebanese waters had been  
118 recorded.

119 This difference in parasites diversity depends actually on the number of hosts examined as  
120 well as the number of hosts in the regions.

121 It should be noted that the identification of some parasites provided here was limited to genus  
122 level only, but the same genus (such as *Gnathia*) was recorded on different fish species. Such  
123 genera in our checklist were counted once, that means, more ectoparasite species may be  
124 present.

125 The (28) ectoparasite species recorded in (15) fish host species represent only (5%) of the  
126 Syrian marine ichthyofauna. Most of the fish species included in the checklist are edible and  
127 economically important, such as *M. cephalus*, *Mullus surmuletus* Linnaeus, 1758 and  
128 *Scomber scombrus*.

129 When considering all host species listed in our work (Table 2), it appears that there are some  
130 uncertainties in the parasite species found. For example, in the case of *Diplodus vulgaris* and  
131 *D. sargus* (Linnaeus, 1758), *Chilodonella piscicola* has been reported (Sbeeh *et al.*, 2012),  
132 however, this species is generally found on freshwater species (Li *et al.*, 2023). On the same  
133 way, *Axine belones* has been reported from *Boops boops* (Hassan *et al.*, 2017) and from  
134 *Lithognathus mormyrus* (Linnaeus, 1758) (Hassan *et al.*, 2018b). However, Axinidae  
135 parasites are usually reported from needlefishes and halfbeaks (Belonidae and  
136 Hemiramphidae) (Kritsky and Bakenhaster, 2022) and except these cited works, has never  
137 been found in other species than *Belone belone* in the Mediterranean basin. As a  
138 consequence, it appears clearly that more studies need to be done in the region and molecular

139 studies have to be performed on the collected parasites species especially because of the  
140 proximity of potential lessepsian parasite species that may colonize closely related fish  
141 species.

142

143

## 144 **Conclusions**

145 In view of great importance of parasites associated with aquaculture, more attention needs to  
146 be paid to the increasing seriousness and frequency of diseases caused by parasites in marine  
147 fishes. To accomplish this work, further studies to identify the ectoparasites and  
148 endoparasites in other fish species, and studying their impact on survival and the chemical  
149 composition of fish seem also of great importance. It will be necessary for Syrian researchers  
150 to be familiar with advances made in related areas of parasitology, such as biology, ecology,  
151 phylogeny and biogeography. Parasitological fauna of fish in the Mediterranean Sea is  
152 relatively well known and quite a few species have already been partially sequenced. This  
153 may help future work for the inventory of parasite diversity of fish from Syria. This could be  
154 achieved with international collaboration with specialists from different countries in order to  
155 undertake more detailed studies of these important parasites and to prevent potential diseases.

156 **Acknowledgments:** The authors are grateful to Sophie Arnaud-Haond for her advice during  
157 the preparation of the manuscript.

158 **Authors' Contribution:** This work was carried out in collaboration between the authors. All  
159 authors read and approved the final manuscript.

160 **Funding Information:** This research received no specific grant from any funding agency,  
161 commercial or not-for-profit sectors.

162 **Conflict of interest declaration:** The authors declare none.

163 **Ethical standards:** The authors assert that all procedures contributing to this work comply  
164 with the ethical standards of the relevant national and institutional guides on the care and use  
165 of laboratory animals.

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262 **Table 1. List of ectoparasites recorded in Syrian marine waters. Abbreviations: G: Gills, S: Skin, CF: Caudal Fin, BC: Buccal Cavity,**  
 263 **S.S: Samlpe size (individuals), I.S: Infected Site, P%: Prevalence, Int: Mean Intensity, (-) no data.**

Class	Species: Family	Host: Family	S.S	I.S	P%	Int	Reference
<b>Hexanauplia</b>	<i>Caligus apodus</i> (Brian, 1924): Caligidae	<i>Mugil cephalus</i> : Mugilidae	124	G,S	-	-	Dayoub and Dayoub (2020)
	<i>Caligus apodus</i>	<i>Chelon auratus</i> : Mugilidae	142	G,S	-	-	Dayoub and Dayoub (2020)
	<i>Caligus pageti</i> Russell, 1925: Caligidae	<i>Mugil cepahlus</i>	238	CF	2.1	1.2	Hassan <i>et al.</i> (2022)
	<i>Hatschekia sp.</i> Poche, 1902: Hatschekiidae	<i>Lithognathus mormyrus</i> : Sparidae	54	G	14.3	2.2	Hassan <i>et al.</i> , 2018a
<b>Malacostraca</b>	<i>Gnathia sp.</i> Leach, 1814: Gnathiidae	<i>Siganus rivulatus</i> : Siganidae	50	G	8	2.5	Hassan <i>et al.</i> (2010)
	<i>Gnathia sp.</i>	<i>Siganus luridus</i> : Siganidae	50	G	10	1.8	Hassan <i>et al.</i> (2010)
	<i>Gnathia sp.</i>	<i>Fistularia commersonii</i> : Fistulariidae	150	G,BC	13.3	1.2	Hassan <i>et al.</i> (2018b)
	<i>Gnathia sp.</i>	<i>Lithognathus mormyrus</i>	54	G	8.6	1.7	Hassan <i>et al.</i> (2018a)
	<i>Gnathia sp.</i>	<i>Saurida undosquamis</i> : Synodontidae	100	G,BC	14	1.2	Hassan <i>et al.</i> (2018b)
	<i>Gnathia sp.</i>	<i>Sparus auratus</i> : Sparidae	55	G	3.6	2	Fadel <i>et al.</i> (2018)
<b>Maxillopoda</b>	<i>Ergasilus sp.</i> von Nordmann, 1832: Ergasilidae	<i>Mugil cephalus</i>	124	G	-	-	Dayoub and Dayoub (2020)
	<i>Ergasilus sp.</i>	<i>Chelon auratus</i>	142	G	-	-	Dayoub and Dayoub (2020)
<b>Monogenea</b>	<i>Ancyrocephalus sp.</i> Creplin, 1839: Ancyrocephalidae	<i>Sargocentron rubrum</i> : Holocentridae	50	G	28	2.1	Hassan <i>et al.</i> (2010)
	<i>Axine belones</i> Abildgaard, 1794: Axinidae	<i>Boops boops</i> : Sparidae	85	G	56.5	2.5	Hassan <i>et al.</i> (2017)
	<i>Axine belones</i>	<i>Lithognathus mormyrus</i>	54	G	8.6	2	Hassan <i>et al.</i> (2018a)
	<i>Furnistinia echeneis</i> (Wagener, 1857): Diplectanidae	<i>Sparus auratus</i>	55	G	32.7	1.6	Hassan <i>et al.</i> (2017)
	<i>Furnistinia echeneis</i>	<i>Boops boops</i>	85	G	-	-	Fadel <i>et al.</i> (2018)
	<i>Glyphidohaptor plectocirra</i> (Paperna, 1972): Dactylogyridae	<i>Siganus rivulatus</i>	50	G	70	3.9	Hassan <i>et al.</i> (2010)
	<i>Glyphidohaptor plectocirra</i>	<i>Siganus luridus</i>	50	G	70	3.1	Hassan <i>et al.</i> (2010)
	<i>Grubea cochlear</i> Diesing, 1858: Mazocraeidae	<i>Mullus surmuletus</i> : Mullidae	50	G	40	5	Layka <i>et al.</i> (2016)
	<i>Kuhnia scombri</i> (Kuhn, 1829) Sproston, 1945: Mazocraeidae	<i>Mullus surmuletus</i>	50	G	42	2	Layka and Hassan (2017)
	<i>Kuhnia scombri</i>	<i>Scomber scombrus</i> : Scombridae	224	G	4.5	1.5	Gnedet <i>et al.</i> (2023)
	<i>Lamellodiscus elegans</i> Bychowsky, 1957: Diplectanidae	<i>Diplodus sargus</i> : Sparidae	100	G	-	-	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus elegans</i>	<i>Lithognathus mormyrus</i>	54	G	68.6	39.5	Hassan <i>et al.</i> (2018a)
	<i>Lamellodiscus elegans</i>	<i>Sparus auratus</i>	55	G	20	2.4	Fadel <i>et al.</i> (2018)
	<i>Lamellodiscus elegans</i>	<i>Diplodus vulgaris</i> : Sparidae	18	G	88.9	-	Dayoub (2020)

Table 1. Continued

Class	Species: Family	Host: Family	S.S	I.S	P%	Int	Reference
<b>Monogenea</b>	<i>Lamellodiscus elegans</i>	<i>Pagellus erythrinus</i> : Sparidae	146	G	87.7	11.5	Layka and Saleem (2020)
	<i>Lamellodiscus ignoratus</i> Palombi, 1943: Diplectanidae	<i>Diplodus vulgaris</i>	104	G	-	-	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus ignoratus</i>	<i>Diplodus sargus</i>	100	G	-	-	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus sp.</i> Johnston & Tiegs, 1922: Diplectanidae	<i>Diplodus vulgaris</i>	104	G	-	-	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus sp.</i>	<i>Diplodus sargus</i>	100	G	-	-	Sbeeh <i>et al.</i> 2012
	<i>Ligophorus mediterraneus</i> Sarabeev, Balbuena & Euzet, 2005: Ancyrocephalidae	<i>Mugil cephalus</i>	133	G	17.4	-	Dayoub and Dayoub (2018)
	<i>Ligophorus mediterraneus</i>	<i>Chelon auratus</i>	133	G	25	-	Dayoub and Dayoub (2018)
	<i>Ligophorus cephalis</i> : Ancyrocephalidae	<i>Chelon auratus</i>	45	G	18.4	1	Layka and Badran (2019)
	<i>Mazocraes sp.</i> Hermann, 1782: Mazocraeidae	<i>Sargocentron rubrum</i>	50	G	56	3.9	Hassan <i>et al.</i> (2010)
	<i>Microcotyle mugilis</i> Vogt, 1878: Microcotylidae	<i>Siganus rivulatus</i>	60	G	0.6	-	Layka and Badran (2018)
	<i>Microcotyle spinicirrus</i> MacCallum, 1918: Microcotylidae	<i>Lithognathus mormyrus</i>	54	G	15.4	3	Soultanah <i>et al.</i> (2018)
	<i>Microcotyle sp.</i> Van Beneden & Hesse, 1863: Microcotylidae	<i>Pagellus erythrinus</i>	146	G	25.3	1.6	Layka and Saleem (2020)
<i>Choricotyle sp.</i> Van Beneden & Hesse, 1863: Dicliphoridae	<i>Pagellus erythrinus</i>	146	G	0.7	1	Layka and Saleem (2020)	
<b>Myxozoa</b>	<i>Myxobolus bizerti</i> Bahri & Marques, 1996: Myxobolidae			G	-	-	
	<i>Myxobolus ichkeulensis</i> Bahri & Marques, 1996: Myxobolidae	<i>Mugil cephalus</i>	557	G	-	-	Salman <i>et al.</i> (2017)
	<i>Myxobolus muelleri</i> Bütschli, 1882: Myxobolidae			G	-	-	
	<i>Myxobolus parvus</i> Shulman, 1962: Myxobolidae			G	-	-	
<b>Oligohymenophorea</b>	<i>Trichodina sp.</i> Ehrenberg, 1830: Trichodinidae	<i>Mugil cephalus</i>	124	S	8.1	64	Dayoub and Dayoub (2020)
<b>Phyllopharyngea</b>	<i>Chilodonella piscicola</i> Strand, 1928: Chilodonellidae	<i>Diplodus vulgaris</i>	104	G,S	-	-	Sbeeh <i>et al.</i> (2012)
	<i>Chilodonella piscicola</i>	<i>Diplodus sargus</i>	100	G,S	-	-	Sbeeh <i>et al.</i> (2012)
<b>Trematoda</b>	<i>Didymozoon longicolle</i> Ishii, 1935: Didymozoidae	<i>Mullus surmuletus</i>	50	G	-	-	Hassan and Layka (2018)

265 **Table 2. List of ectoparasites and host fish species recorded in Syrian marine waters.**  
 266 **(PC): Potential to be cultivated.**

<b>Host: Family</b>	<b>Parasite species: Family</b>	<b>Reference</b>
<i>Boops boops</i> : Sparidae	<i>Axine belones</i> : Axinidae	Hassan <i>et al.</i> (2017)
	<i>Furnistinia echeneis</i> : Diplectanidae	Fadel <i>et al.</i> (2018)
<i>Diplodus sargus</i> : Sparidae	<i>Chilodonella piscicola</i> : Chilodonellidae	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus elegans</i> : Diplectanidae	=
	<i>Lamellodiscus ignoratus</i> : =	=
	<i>Lamellodiscus sp.</i> : =	=
<i>Diplodus vulgaris</i> : Sparidae	<i>Chilodonella piscicola</i> : Chilodonellidae	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus elegans</i> : Diplectanidae	Dayoub (2020)
	<i>Lamellodiscus ignoratus</i> : =	Sbeeh <i>et al.</i> (2012)
	<i>Lamellodiscus sp.</i> : =	=
<i>Fistularia commersonii</i> : Fistulariidae	<i>Gnathia sp.</i> : Gnathiidae	Hassan <i>et al.</i> (2018b)
<i>Lithognathus mormyrus</i> : Sparidae	<i>Axine belones</i> : Axinidae	Hassan <i>et al.</i> (2018a)
	<i>Gnathia sp.</i> : Gnathiidae	=
	<i>Hatschekia sp.</i> : Hatschekiidae	=
	<i>Lamellodiscus elegans</i> : Diplectanidae	=
	<i>Microcotyle spinicirrus</i> : Microcotylidae	Soultanah <i>et al.</i> (2018)
<i>Chelon auratus</i> : Mugilidae (PC)	<i>Caligus apodus</i> : Caligidae	Dayoub and Dayoub (2020)
	<i>Ergasilus sp.</i> : Ergasilidae	=
	<i>Ligophorus cephalis</i> : Ancyrocephalidae	Layka and Badran (2019)
	<i>Ligophorus mediterraneus</i> : =	Dayoub and Dayoub (2018)
<i>Mugil cephalus</i> : Mugilidae (PC)	<i>Caligus apodus</i> : Caligidae	Dayoub and Dayoub (2020)
	<i>Caligus pageti</i> : =	Hassan <i>et al.</i> (2022)
	<i>Ergasilus sp.</i> : Ergasilidae	Dayoub and Dayoub (2020)
	<i>Ligophorus mediterraneus</i> : Ancyrocephalidae	Dayoub and Dayoub (2018)
	<i>Myxobolus bizerti</i> : Myxobolidae	Salman <i>et al.</i> (2017)
	<i>Myxobolus ichkeulensis</i> : =	=
<i>Myxobolus muelleri</i> : =	=	

**Table 2.**  
**Continued**

<b>Host: Family</b>	<b>Parasite species: Family</b>	<b>Reference</b>
<i>Mugil</i>	<i>Myxobolus parvus</i> : Myxobolidae	Salman <i>et al.</i> (2017)

<b><i>cephalus:</i></b> Mugilidae	<b><i>Trichodina sp.:</i></b> Trichodinidae	Dayoub and Dayoub (2020)
<b><i>Mullus surmuletus:</i></b> Mullidae	<b><i>Didymozoon longicolle:</i></b> Didymozoidae	Hassan and Layka (2018)
	<b><i>Grubea cochlear:</i></b> Mazocraeidae	Layka <i>et al.</i> (2016)
	<b><i>Kuhnia scombri:</i></b> =	Layka and Hassan (2017)
<b><i>Pagellus erythrinus:</i></b> Sparidae	<b><i>Choricotyle sp.:</i></b> Dicliphoridae	Layka and Saleem (2020)
	<b><i>Lamellodiscus elegans:</i></b> Diplectanidae	=
	<b><i>Microcotyle sp.:</i></b> Microcotylidae	=
<b><i>Sargocentron rubrum:</i></b> Holocentridae	<b><i>Ancyrocephalus sp.:</i></b> Ancyrocephalidae	Hassan <i>et al.</i> (2010)
	<b><i>Mazocraes sp.:</i></b> Mazocraeidae	=
<b><i>Saurida undosquamis:</i></b> Synodontidae	<b><i>Gnathia sp.:</i></b> Gnathiidae	Hassan <i>et al.</i> (2018b)
<b><i>Scomber scombrus:</i></b> Scombridae	<b><i>Kuhnia scombri:</i></b> Mazocraeidae	Gnede <i>et al.</i> (2023)
<b><i>Siganus rivulatus:</i></b> Siganidae (PC)	<b><i>Glyphidohaptor plectocira:</i></b> Dactylogyridae	Hassan <i>et al.</i> (2010)
	<b><i>Gnathia sp.:</i></b> Gnathiidae	=
	<b><i>Microcotyle mugilis:</i></b> Microcotylidae	Layka and Badran (2018)
<b><i>Siganus luridus:</i></b> Siganidae	<b><i>Glyphidohaptor plectocira:</i></b> Dactylogyridae	Hassan <i>et al.</i> (2010)
	<b><i>Gnathia sp.:</i></b> Gnathiidae	=
<b><i>Sparus auratus:</i></b> Sparidae (PC)	<b><i>Furnistinia echeneis:</i></b> Diplectanidae	Hassan <i>et al.</i> (2017)
	<b><i>Gnathia sp.:</i></b> Gnathiidae	Fadel <i>et al.</i> (2018)
	<b><i>Lamellodiscus elegans:</i></b> Diplectanidae	=

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274 **Table 3. List of similar ectoparasites recorded in Syrian and Turkish waters. (-) no data.**

Parasite: Species - Class	Syrian waters		Turkish waters	
	Host	Reference	Host	Reference
<i>Kuhnia scombri</i> : Monogenea	<i>Mullus surmuletus</i>	Layka and Hassan (2017)	<i>Scomber japonicus</i> : Scombridae	Akmirza (2003)
	<i>Scomber scombrus</i>	Gnede <i>et al.</i> (2023)	<i>Scomber scombrus</i>	Tareen (1982)
<i>Axine belones</i> : Monogenea	<i>Boops boops</i>	Hassan <i>et al.</i> (2017)	<i>Belone belone</i> : Belonidae	Öktener (2005)
	<i>Lithognathus mormyrus</i>	Hassan <i>et al.</i> (2018a)	-	
<i>Choricotyle sp</i> : Monogenea	<i>Pagellus erythrinus</i>	Layka and Saleem (2020)	<i>Pagellus erythrinus</i>	Akmirza (2000)
		-	<i>Spondylisoma cantharus</i> : Sparidae	Akmirza (2013)
		-	<i>Boops boops</i>	Akmirza (2013)
<i>Grubea cochlear</i> : Monogenea	<i>Mullus surmuletus</i>	Layka <i>et al.</i> (2016)	<i>Scomber scombrus</i>	Tareen (1982)
<i>Lamellodiscus elegans</i> : Monogenea	<i>Diplodus sargus</i>	Sbeeh <i>et al.</i> (2012)	<i>Sparus auratus</i>	Tareen (1982)
	<i>Lithognathus mormyrus</i>	Hassan <i>et al.</i> (2018a)	-	
	<i>Sparus auratus</i>	Fadel <i>et al.</i> (2018)	-	
	<i>Diplodus vulgaris</i>	Dayoub (2020)	-	
<i>Lamellodiscus ignoratus</i> : Monogenea	<i>Pagellus erythrinus</i>	Layka and Saleem (2020)		
	<i>Diplodus vulgaris</i>	Sbeeh <i>et al.</i> (2012)	<i>Diplodus puntazzo</i> : Sparidae	Tokşen <i>et al.</i> (2003)
<i>Mazocraes sp</i> : Monogenea	<i>Diplodus sargus</i>	Sbeeh <i>et al.</i> (2012)	-	
	<i>Sargocentron rubrum</i>	Hassan <i>et al.</i> (2010)	<i>Alosa immaculata</i> : Clupeidae	Akmirza (2013)

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