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The Cymothoidae (Crustacea, Isopoda), parasites on marine fishes, from Algerian fauna

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RÉSUMÉ. Study of the cymothoid parasites of marine fish from Algeria, particularly in the Béjaïa and Jijel gulfs, allowed us to identify nine species *(Anilocra frontalis, A. physodes, Nerocila bivittata, N. orbignyi, N. maculata, Ceratothoa parallela, C. oestroides, C. oxyrrhynchaena, C. italica*). Eight have been recorded previously, but *Ceratothoa italica* is a new record for the region. New hosts for *Anilocra frontalis, Nerocila maculata* (host until now unidentified in Algeria) and *Nerocila orbignyi* are reported. For each parasite collected, the host fish, geographic distribution, parasitic specificity and prevalence are given. An up-to-date check-list of the fourteen species now reported from Algeria is given.

KEY WORDS : Cymothoidae, Crustacea, parasitic isopods, Algeria.

Les Cymothoidae (Crustacea, Isopoda), parasites de poissons marins, de la faune Algérienne

RÉSUMÉ. Le présent travail constitue une mise au point sur les Cymothoidae ectoparasites de poissons de la côte algérienne. Pour l'instant, neuf espèces ont été inventoriées par les auteurs : *Anilocra frontalis*, *A. physodes*, *Nerocila bivitatta*, *N. orbignyi*, *N. maculata, Ceratothoa paralella*, *C. oestroides*, *C. oxyrrhynchaena*, *C. italica*. Parmi celles-ci, *Ceratothoa italica* est nouvelle pour la faune algérienne. Toutes ces espèces sont signalées pour la première fois dans le golfe de Béjaïa et dans le golfe de Jijel. Des hôtes nouveaux pour *N. orbignyi* et *A. frontalis*, ainsi que le poisson hôte de *N. maculata* jusqu'à présent inconnu en Algérie, ont été identifiés. Pour chacune des espèces, le(s) poisson(s) hôte(s), la distribution géographique, la spécificité parasitaire et les prévalences sont précisés. Une liste récapitulative des quatorze espèces actuellement signalées en Algérie est enfin établie.

MOTS CLES : Cymothoidae, Crustacea, isopodes parasites, Algérie.

INTRODUCTION

Crustacean ectoparasites on marine fish are diverse. Many species of fish are infected by cymothoids (Crustacea, Isopoda, Cymothoidae). They are blood-feeding; several species settle in the buccal cavity of fish, others live in the gill chamber or on the body surface including the fins. Their life cycle involves only one host (Holoxenic cycle).

According to TRILLES (1986), 46 species of Cymothoidae have been reported in Africa (12 Anilocrinae and 34 Cymothoinae). The cymothoid fauna of diverse localities along the Algerian coasts have been incompletely studied, several of them around a century ago : LUCAS, 1849 (Algiers, Annaba : ex-Bône, Oran, Algeria); SCHIOEDTE & MEINERT, 1881 (Annaba); SCHIOEDTE & MEINERT, 1883 (Oran); CARUS, 1885 (Algiers, Annaba, Oran); GOURRET, 1891 (Algeria); MONOD, 1924 a-b (Oran).

More recent studies are those of TRILLES (1972; Algeria, Oran, Bou-Ismail : ex-Castiglione), TRILLES (1975; Algeria, Bou-Ismail, Skikda : ex-Philippeville, Annaba), DOLLFUS & TRILLES (1976; Algeria, Algiers, Bou-Ismail, Bou-Haroun), TRILLES (1977; Algiers), TRILLES (1979; Bou-Ismail) and TRILLES (1986; Algeria).

The cymothoid fauna of the areas that we have now prospected, the gulf of Béjaïa and the gulf of Jijel as well as the Tamelaht lagoon and the Soummam Oued, have not until now been studied.

MATERIALS AND METHODS

Fish samples were obtained from the gulf of Béjaïa and the gulf of Jijel, as well as the Tamelaht lagoon and the Oued Soummam (East Algeria; near Tunisia) (Fig. 1), between April and September 2005. Fish were captured using diverse fishing techniques : at sea by using trawl, trammel, palangre or harpoon, and in the Soummam Oued and the Tamelaht lagoon by carelet or monofilament. Parasites were collected from fish and immediately preserved in 70% alcohol. Data on collecting period, sampling area, name and size of host as well as the location of fish capture, were noted. Prevalence (P) was calculated. The geographical distribution and host species were also specified. Finally, we compiled a check-list of all cymothoids reported to the present time from the Algerian coasts.

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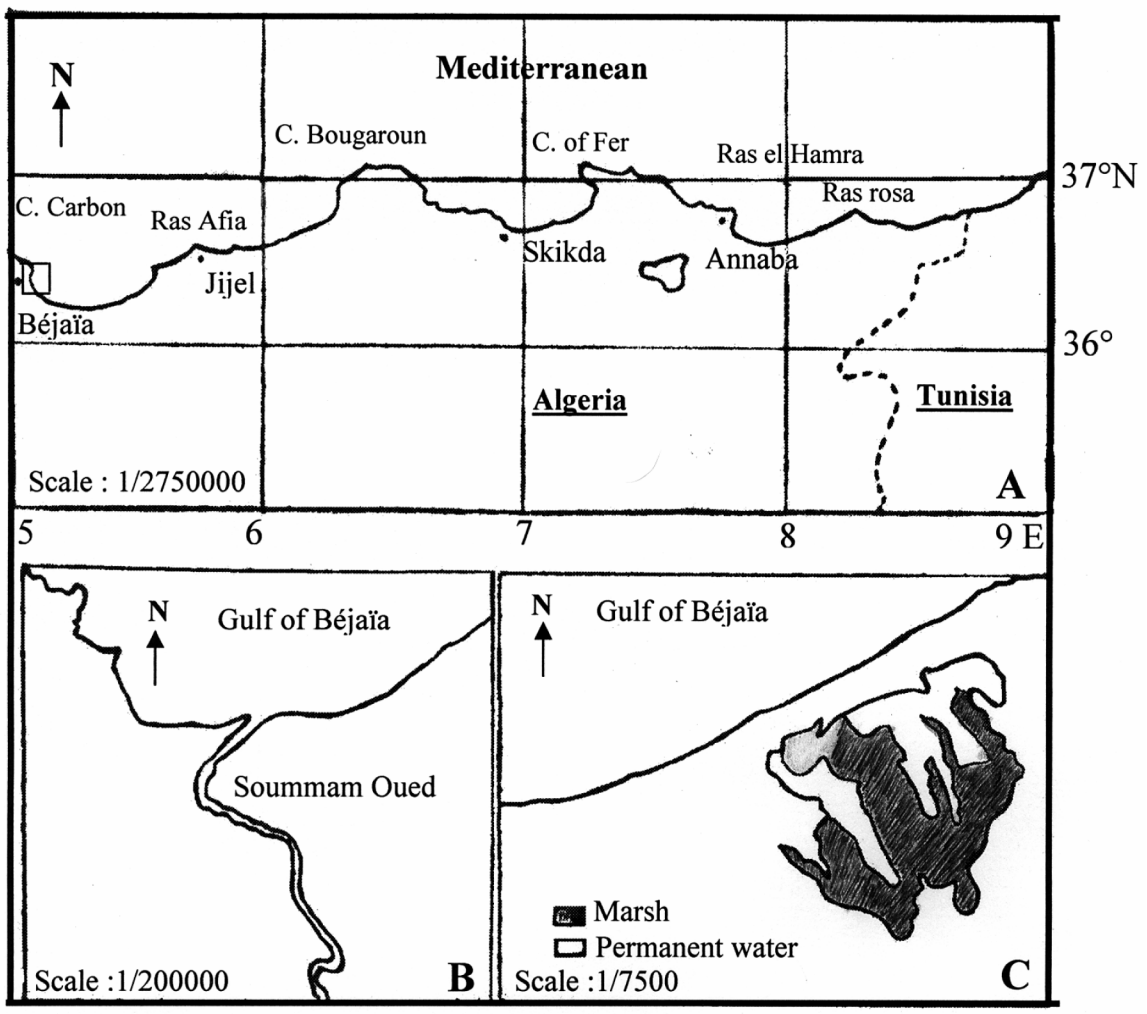

Fig. 1. – Location of the study
A : Situation of the gulf of Béjaïa (between the Cape Carbon and Ras Afia) and the gulf of Jijel (between Ras Afia and the Cape Bourgaroun); **B**, **C** : Situation of the Soummam Oued and the Tamelaht Lagoon.

TABLE 1

Parasitological index of the Cymothoidae collected

Parasites/hosts species	NFE	LS	NFI	P	PC
Anilocra physodes					
Spondiliosoma cantharus	3	[20-26]	1	33.33	GJ
Anilocra frontalis					
Mullus barbatus	82	[10-23]	9	10.98	GB
Umbrina canariensis	4	[19-25]	1	25	GB
Pagellus acarne	44	[14-24]	1	2.27	GB
Diplodus annularis	24	[10-17]	2	8.33	GB

TABLE 1

Parasitological index of the Cymothoidae collected

Parasites/hosts species	NFE	LS	NFI	P	PC
Lithognathus mormyrus	25	[14-22]	1	4	GB
Solea vulgaris	21	[12-21]	1	4.76	GB
Lithognathus mormyrus	7	[14-19]	1	14.28	GJ
Crenilabrus pavo	7	[16-20]	2	28.57	GJ
Nerocila bivittata					
Crenilabrus pavo	9	[16-25]	1	11.11	GB
Nerocila orbignyi					
Mugil cephalus	55	[15-36]	1	1.81	GB (SO)
Crenilabrus pavo	9	[16-25]	2	22.22	GB
Crenilabrus pavo	7	[16-20]	2	28.57	GJ
Trigla lyra	9	[19-26]	1	11.11	GB
Nerocila maculata					
Pagellus acarne	44	[14-24]	2	4.54	GB
Ceratothoa italica					
Diplodus annularis	24	[10-17]	1	4.17	GB
Ceratothoa oestroides					
Boops boops	140	[10-25]	11	7.9	GB
Spicara smaris	25	[11-17]	3	12	GB
Pagellus acarne	44	[14-24]	2	4.54	GB
Trachurus trachurus	109	[11-26]	1	0.92	GB
Ceratothoa oxyrrhynchaena					
Spicara smaris	25	[11-17]	2	8	GB
Boops boops	140	[10-25]	5	3.75	GB
Ceratothoa parallela					
Boops boops	140	[10-25]	12	8.60	GB
Trachurus trachurus	109	[11-26]	3	2.75	GB
Spicara smaris	25	[11-17]	1	4	GB

NFE = Number of fish examined; **LS** = Range of fish size (cm); **NFI** = Number of fish infected; **P** = Prevalence (%); **PC** = Place of collection; **GB** = Gulf of Béjaïa; **GJ** = Gulf of Jijel; **SO** = Soummam Oued.

RESULTS AND DISCUSSION

Cymothoidae now collected by the authors.

ANILOCRINAE

Anilocra Leach, 1814

Anilocra frontalis Milne Edward, 1840

Anilocra frontalis (Table 1) was collected from the body of *Umbrina canariensis* (P = 25%), *Mullus barbatus* (P = 10.98%), *Pagellus acarne* (P = 2.27%), *Diplodus annularis* (P = 8.33%), *Lithognathus mormyrus* (P = 4% in the gulf of Béjaïa; P = 14.28% in the gulf of Jijel), *Solea vulgaris* (P = 4.76%) and *Crenilabrus pavo* (P = 28.57% in the gulf of Jijel). This is the first record of the species in the gulfs of Béjaïa and Jijel.

The distribution of this species is wide : North Sea, Atlantic, Mediterranean and Adriatic (Trilles, 1994), in Tunisia (Trilles & Raibaut, 1971), in Morocco (Trilles, 1975) and more recently in Turkey (Öktener & Trilles, 2004).

In Algeria, *A. frontalis* has been previously recorded (Trilles, 1986, 1994) from Oran (Milne Edward, 1840; Lucas, 1849; Carus, 1885), Mers-el-Kébir (Lucas, 1849; Carus, 1885), Algeria (Trilles, 1975), Bou-Ismail (Trilles, 1975; Trilles, 1979), Algiers (Dollfus & Trilles, 1976).

This species, characterized by a euryxenic or stenoxenic specificity according to the prospected area, was found on several host species, especially Labridae (*Labrus maculatus*, *L. vetula*, *L. bergylta*, *L. merula*, *Crenilabrus melops*, *C. cinereus*, *C. ocellatus*) but sometimes on other fish (*Gadus sp*, *Merlangius pollachius*, *Blennius pholis*, *Cottus bubalis*, *Gobius flavescens*, *G. paganellus*, *G. minutus*, *Onos mustela*, *Spinachia vulgaris*, *Boops boops*, *Boops salpa* and *Spondyliosoma cantharus* (Trilles, 1994). In Algeria, it has been previously collected from *Diplodus annularis*, *Oblada melanura*, *Gobius paganellus* and an unidentified Labridae (Dollfus & Trilles, 1976). Our results are, therefore, in agreement with those from other Mediterranean areas. In Algeria, *Anilocra frontalis* is probably a euryxenic species.

Anilocra physodes (L., 1758)

Anilocra physodes (Table 1) was collected only from the body of *Spondyliosoma cantharus* (P = 33.33%) in the gulf of Jijel. It has been broadly reported from differents part of the Mediterranean, the Adriatic, the Black Sea and the Egean Sea (Trilles, 1975). In the southern and eastern Mediterranean, this species was found in Egypt (Trilles, 1975), Tunisia (Trilles & Raibaut, 1971; 1973; Charfi-Cheikhrouha et al., 2000), Morocco

(Trilles, 1975), Turkey (Öktener & Trilles, 2004) and Lebanon (Bariche & Trilles, 2005).

In Algeria, it was previously reported (Trilles, 1986; 1994) from Algiers (Lucas, 1849; Carus, 1885; Fain-Maurel, 1966; Trilles, 1975; Dollfus & Trilles, 1976), in the gulf of Skikda (ex-Philippeville) and from Bou-Ismail (Trilles, 1975). *A. physodes* is recorded for the first time in the Gulf of Jijel.

This euryxenic species has a wide host range, with, however, a certain preference for the Sparidae and the Maenidae (Trilles, 1975). In Tunisia, it was recently found on *Lithognathus mormyrus*, *Sciaena umbra* and *Uranoscopus scaber* (Charfi-Cheikhrouha et al., 2000). In Lebanon, Bariche & Trilles (2005) collected this species from *Boops boops* and *Lithognathus mormyrus* but also, for the first time, from *Pagrus caeruleostictus* and *Pagellus acarne*. In Algeria, it was previously reported on *Maena vulgaris* (Carus, 1885), *Spicara, Boops, Pagellus* and other Sparidae (Fain-Maurel, 1966), *Diplodus fasciatus*, *Spondyliosoma cantharus*, *Scorpaena porcus*, *Zeus faber* (Trilles, 1975). From Castiglione, Dollfus & Trilles (1976) reported this species on *Smaris chryselis* and *Spondyliosoma cantharus*. At the level of the zone prospected in our study, the specificity of this species may be narrower than in other areas and oïoxenic.

Nerocila Leach, 1818

Nerocila bivittata (Risso, 1816)

Nerocila bivittata (Table 1) was collected from the caudal fin of *Crenilabrus pavo* (P = 11.11%) in the gulf of Béjaïa. In the Mediterranean, it was reported by Trilles (1968; 1977). Along the Tunisian coasts, it has been identified by Trilles & Raibaut (1973) and Charfi-Cheikhrouha et al. (2000). This species was recently found in Turkey (Öktener & Trilles, 2004) and in Lebanon (Bariche & Trilles, 2005).

It has been mentioned from Algeria by several authors (Trilles, 1986; 1994) : Algeria (Gourret, 1891; Dollfus & Trilles, 1976), Annaba (Lucas, 1849; Schioedte & Meinert, 1881; Carus, 1885), Oran (Lucas, 1849; Carus, 1885), Algiers (Carus, 1885; Trilles, 1977) and Bou-Ismail (Trilles, 1975). *N. bivittata* is noted for the first time in the gulf of Béjaïa.

In the Mediterranean, this species is chiefly parasitic on fish belonging to the family Labridae (Trilles, 1994; Charfi-Cheikhrouha et al., 2000), but has sometimes been collected from hosts from other families : Scorpaenidae (*S. scrofa*, *S. porcus*) (Trilles, 1975), Sciaenidae (*Sciaena umbra*), Mullidae (*Mullus surmuletus*), Gobiidae (*Gobius geniporus*), Serranidae (*Serranus scriba*) (Charfi-Cheikhrouha et al., 2000), Sparidae, Gobiidae and Sciaenidae (Öktener & Trilles, 2004), Triglidae and Sparidae (Bariche & Trilles, 2005). *Nerocila bivittata* is a stenoxenic species with a preference for Labribae, but that specificity may change with locality, becoming euryxenic in some areas.

Our results confirm the preferential occurrence of this species on Labridae with perhaps stenoxenic specificity in Algeria.

Nerocila orbignyi (Guérin-Mèneville, 1832)

Nerocila orbignyi was collected (Table 1) from the caudal fin of *Mugil cephalus* (P = 1.81%) in the gulf of Béjaïa and the Soummam Oued, from the head of *Trigla lyra* (male; P = 11.11%) in the Gulf of Béjaïa, and from the caudal fin of *Crenilabrus pavo* in the gulf of Béjaïa (P = 22.22%) and in the gulf of Jijel (P = 28.57%).

This species has already been recorded in the Mediterranean (Trilles, 1977; Trilles, 1994), along the Turkish coasts (Öktener & Trilles, 2004), from Morocco (Dollfus & Trilles, 1976) and Tunisia (Trilles & Raibaut, 1973; Charfi-Cheikhrouha et al., 2000). In Algeria, it was previously reported only from Annaba by Lucas (1849). It is identified for the first time in the gulfs of Béjaïa and Jijel.

This species settles preferentially on the Mugilidae (Trilles, 1994; Öktener & Trilles, 2004). In Africa, particularly in Tunisia, it has been collected from *Mugil cephalus*, *Mugil auratus*, *Mugil capito* and *Mugil labrosus* (Trilles & Raibaut, 1973), *Liza ramada*, *Liza saliens*, *Liza auratus*, *Chelon labrosus* (Charfi-Cheikhrouha et al., 2000). However, this euryxenic species has also been reported from several other fish (Trilles, 1994; Öktener & Trilles, 2004), on *Alosa fallax nilotica* (Trilles & Raibaut, 1973), *Batrachus didactylus*, *Solea senegalensis* (Dollfus & Trilles, 1976), *Dicentrarchus labrax*, *Solea solea*, *Serranus scriba*, and *Diplodus annularis* (Charfi-Cheikhrouha et al., 2000).

Our results are, therefore, in agreement with the previously known characteristics of this euryxenic species. However, the prevalence values observed suggest that in Algeria the preference of *N. orbignyi* for the mugilids is not as marked.

Nerocila maculata (Milne Edward, 1840)

Nerocila maculata (Table 1) was collected from the pelvic fin and from the operculum of *Pagellus acarne* (P = 4.54%) from the gulf of Béjaïa. Trilles (1986; 1994) recorded this species from the Mediterranean to the Atlantic coasts of Southern Europe. It has been identified in Algeria from Annaba by Lucas (1849), Carus (1885) and Trilles (1975). This species is recorded for the first time in the gulf of Béjaïa.

Along the French coasts, it has been collected on *Gadus capelanus* (Trilles, 1968), and from Morocco on *Gadus capelanus* and *Raja alba* (Dollfus & Trilles, 1976).

In Algeria, until now, the identity of the host fish was unknown (Trilles, 1986). Our results are not in agreement with the previous data from other areas; a change in specificity is perhaps possible according to the prospected localities.

CERATOTHOINAE

Ceratothoa Dana, 1852

Ceratothoa italica Schioedte and Meinert, 1883

Ceratothoa italica (Table 1) was found in the buccal cavity of *Diplodus annularis* (P = 4.17%), in the gulf of Béjaïa. This is the first record of *Ceratothoa italica* from the Algerian coast.

This ectoparasite is relatively uncommon; it is known in the Mediterranean and in the Adriatic (Trilles, 1968; Trilles et al., 1989). It has been reported from Tunisia and the north-western Atlantic coasts of Africa, Mauritania and western Morocco (Trilles, 1972; 1986); recently, this species was collected in Turkey (Öktener & Trilles, 2004) and in Lebanon (Bariche & Trilles, 2005).

C. italica has been collected from several species of Sparidae : *Pagellus mormyrus*, *Pagellus erythrinus*, *Oblada melanura*, *Cantharus lineatus*, and *Sargus sp.* (Trilles, 1994; Horton, 2000). In Turkey, Öktener & Trilles (2004) found this species on *Dicentrarchus labrax* and *Spicara maena*, while Bariche & Trilles (2005) found it only on *Dicentrarchus labrax* in Lebanon. Therefore, the specificity of this species varies, being euryxenic, stenoxenic or oïoxenic according to the prospected areas.

Diplodus annularis is a new host for *C. italica* and its specificity may be oïoxenic in the gulf of Béjaïa.

Ceratothoa oestroides (Risso, 1826)

Ceratothoa oestroides (Table 1) was collected from the mouth of *Trachurus trachurus* (P = 0.92%), *Pagellus acarne* (P = 4.54%), *Spicara smaris* (P = 12%) and *Boops boops* (P = 7.9%) from the gulf of Béjaïa.

This species has already been reported from the Mediterranean, the Adriatic and the northwestern Atlantic coasts of Africa (Trilles, 1994; Horton, 2000). It has been collected particularly in Tunisia (Trilles & Raibaut, 1971; Charfi-Cheikhrouha et al., 2000), Morocco and Algeria (Trilles, 1972); recently, it was reported from Turkey (Öktener & Trilles, 2004) and Lebanon (Bariche & Trilles, 2005). Ours is the first record of its collection in the gulf of Béjaïa.

Trilles (1986) notes a preference of this species for the Sparidae and Maenidae. In Tunisia, it has been collected on *Boops boops*, *Diplodus annularis* and *Trachurus trachurus* (Trilles & Raibaut, 1971), in Turkey on *Spicara maena* and *Sardina pilchardus* (Öktener & Trilles, 2004) and from Lebanon on *Sparus aurata* (Bariche & Trilles, 2005). According to Trilles (1994), *C. oestroides* is ubiquitous and euryxenic; it can be found infesting several other fish species : *Physis mediterranea*, *Mullus barbatus*, and *Abudefduf saxatilis*. It has also been collected from cultured *Dicentrarchus labrax* and *Sparus aurata* (Šarušić, 1999). Charfi-Cheikhrouha et al. (2000) report *C. oestroides* from nine species belonging to six families of fish : Sparidae, Carangidae, Clupeidae, Maenidae, Scorpaenidae and Mugilidae.

Therefore, our results are in agreement with previous data. However, *Pagellus acarne* is a new host record for *C. oestroides*.

Ceratothoa oxyrrhynchaena Koelbel, 1878

Ceratothoa oxyrrhynchaena (Table 1) was collected from the buccal cavity of *Spicara smaris* (P = 8%) and *Boops boops* (P = 3.75%) from the gulf of Béjaïa.

The distribution of this parasite is very extended (Trilles, 1986; 1994) : Sea of Japan, Indian Ocean, Mediterranean, Adriatic and Atlantic. In Africa, it has been identified in Tunisia (Trilles & Raibaut, 1971), Mauritania and the Suez gulf (Trilles, 1972). In Algeria, especially from Algiers, it has been reported by Trilles (1972). This species is recorded for the first time in the gulf of Béjaïa.

The distributions of *C. oxyrrhynchaena* and *C. oestroides* are similar, although the first species is distinctly less common (Trilles, 1968; 1994). *Ceratothoa oxyrrhynchaena* has been collected mainly on Maenidae and Sparidae (Trilles, 1968). In Tunisia, this parasite has been reported from the buccal cavity of Maenidae (Trilles & Raibaut, 1971), on *Zeus faber* (Trilles, 1972), *Raja asterias*, *Raja clavata*, *Scyliorhinus stellaris* and *Torpedo marmorata* (Capape & Pantoustier, 1976). In Lebanon, it has been recently collected on *Lithognathus mormyrus* (Bariche & Trilles, 2005). Therefore, our results are in agreement with those of Trilles (1968), Trilles & Raibaut (1971) and Bariche & Trilles (2005).

Ceratothoa parallela (Otto, 1828)

Ceratothoa parallela (Table 1) was collected from the buccal cavity of *Boops boops* (P = 8.60%), of *Spicara smaris* (P = 4%) and of *Trachurus trachurus* (P = 2.75%). It is reported for the first time in the gulf of Béjaïa.

This species has already been collected in the Mediterranean, Adriatic and in the Northeastern Atlantic (Trilles, 1986; 1994). In Africa, it has been collected in Tunisia (Capape & Pantoustier, 1976; Charfi-Cheikhrouha et al., 2000), Algeria (Lucas, 1849; Schioedte & Meinert, 1883; Carus, 1885; Dollfus & Trilles, 1976) and more specifically from Oran and Algiers (Trilles, 1972). It has been recently found in Turkey (Öktener & Trilles, 2004).

Several authors reported this species in the buccal cavity of *Boops boops* (Trilles, 1968; 1994; Charfi-Cheikhrouha et al., 2000; Öktener & Trilles, 2004; respectively from the French, Tunisian and Turkish coasts). *C. parallela* was also occasionally found on other species of fish : *Raja asterias*, *Raja clavata* (Capape & Pantoustier, 1976; Trilles, 1994), *Sparus sp.*, *Dentex vulgaris*, *Boops salpa*, *Esocis belonis*, *Spicara chryselis*, *S. maurii*, *S. alcedo*, *Trigla corax*, *Mullus sp.*, *Gadus capelanus*, *Merlucius merlucius* (Trilles, 1994), cultured *Sparus aurata* (Papapanagiotou & Trilles, 2001) and *Diplodus annularis* (Charfi-Cheikhrouha et al., 2000).

In Algeria, especially in the gulf of Béjaïa, our results are in agreement with the previous data : *Ceratothoa parallela* is a euryxenic species, chiefly parasitic on *Boops boops* and more rarely on *Spicara smaris* and *Trachurus trachurus*.

General list of the Cymothoidae reported to date from Algeria : species, hosts, locations and authors

Cymothoids	Hosts	Locations	Authors
Anilocrinae			
Anilocra physodes (L., 1758)	–	Algiers	Lucas, 1849
	Moena vulgaris	Algiers	Carus, 1885
	Box	Algiers	Fain-Maurel, 1966
	Pagellus		
	Other Sparidae		
	Diplodus fasciatus	Skikda (ex-Phillipeville)	Trilles, 1975
	Spondyliosoma cantharus		
	Scorpaena porcus	Bou-Ismail (ex- Castiglione)	Trilles, 1975
	Zeus faber		
	Spondyliosoma cantharus	Gulf of Jijel	Present study
Anilocra frontalis	–	Oran	Milne Edwards, 1840
Milne Edwards, 1840			Lucas, 1849
			Carus, 1885
			Gerstaeker, 1901
	–	Mers-el-Kébir	Lucas, 1849
	Crenilabrus quinquemaculatus	Bou-Ismail (ex- Castiglione)	Trilles, 1975
	Crenilabrus roissali		
	Labrus viridis	Algeria	Trilles, 1975
	–	Oran	
	Oblada melanura	Algeria	Dollfus & Trilles, 1976
	Labrus bergylta		
	Diplodus annularis		
	Gobius paganellus		
	Crenilabrus sp.		
	Labrus	Bou-Ismail (ex- Castiglione)	Trilles, 1979
	Labrus merula		
	Crenilabrus ocellatus		
	Mullus barbatus	Gulf of Béjaïa	Present study
	Umbrina canariensis		
	Sciaena aquila		
	Pagellus acarne		
	Lithognathus mormyrus		
	Solea vulgaris		
	Diplodus annularis		
	Crenilabrus pavo	Gulf of Jijel	Present study
	Lithognathus mormyrus		
Nerocila orbignyi	–	Annaba (ex Bône)	Lucas, 1849
(Guérin-Méneville, 1832)	*Mugil cephalus*	Gulf of Béjaïa (Soummam Oued)	Present study
	Crenilabrus pavo	Gulf of Béjaïa	Present study
	Crenilabrus pavo	Gulf of Jijel	Present study
	Trygla lyra	Gulf of Béjaïa	Present study
Nerocila maculata	–	Annaba (ex- Bône)	Lucas, 1849
(Milne Edwards, 1840)			Carus, 1885
			Trilles, 1975
	Pagellus acarne	Gulf of Béjaïa	Present study
Nerocila bivittata	–	Algeria	Gourret, 1891
(Risso, 1816)			
	–	Annaba (ex- Bône)	Lucas, 1849
			Schioedte & Meinert, 1881
			Carus, 1885
	–	Oran	Lucas, 1849
			Carus, 1885
	–	Algiers	Carus, 1885
	Crenilabrus melops	Bou-Ismail (ex- Castiglione)	Trilles, 1975
	Crenilabrus pavo		
	Crenilabrus pavo	Gulf of Béjaïa	Present study
Ceratothoinae			
Ceratothoa italica	*Diplodus annularis*	Gulf of Béjaïa	Present study
Schioedte & Meinert, 1883			
Ceratothoa oestroides	Diverse fish species	Annaba (ex- Bône)	Lucas, 1849
(Risso, 1826)		Fort Génois	
	–	Algiers	Carus, 1885
	–	Bou-Ismail (ex- Castiglione)	Trilles (1972; 1979)

General list of the Cymothoidae reported to date from Algeria : species, hosts, locations and authors

Cymothoids	Hosts	Locations	Authors
	–	Bou-Haroun	Dollfus & Trilles, 1976
	Boops boops	Gulf of Béjaïa	Present study
	Spicara smaris		
	Pagellus acarne		
	Trachurus trachurus		
Ceratothoa paralella	–	Algeria	Lucas, 1849
(Otto, 1828)	–	Oran	Lucas, 1849
			Schioedte & Meinert, 1881
			Carus, 1885
			Trilles, 1972
	–	Algiers	Trilles, 1972
	Boops boops	Gulf of Béjaïa	Present study
	Trachurus trachurus		
	Spicara smaris		
Ceratothoa collaris	–	Oran	Lucas, 1849
Schioedte &			Schioedte & Meinert, 1883
Meinert, 1883			Carus, 1885
	Dentex filosus	Oran	Monod, 1924 a-b
	Pagellus sp.		
	Pagellus erythrinus	Oran	Trilles, 1972
	Pagellus acarne		
Ceratothoa oxyrrhynchaena	*Zeus faber*	Algiers	Trilles, 1972
Koelbel, 1878	*Spicara smaris*	Gulf of Béjaïa	Present study
	Boops boops		
Emetha audouini	–	Algeria	Trilles, 1972
(Milne Edwards, 1840)			
Livonecinae			
Idusa dieuzeidei	*Symphurus nigrescens*	Algeria	Dolffus, 1950
Dollfus, 1950			Dollfus & Trilles, 1976
Livoneca pomatomi	*Boops boops*	Algiers	Dollfus & Trilles, 1976
(Gaillat Airoldi, 1940)	*Boops boops*	Bou-Haroun	Dollfus & Trilles, 1976
Livoneca sinuata	*Gobius*	Bou-Haroun	Dollfus & Trilles, 1976
Koelbel, 1878	*Boops boops*	Algiers	Dollfus & Trilles, 1976

Now, 14 Cymothoidae have been reported from Algeria, the majority being widely distributed in the Mediterranean; however, *Ceratothoa collaris* appears to be limited to the Northern and Northwestern coasts of Africa while *C. oxyrrhynchaena* is cosmopolitan. We report nine species, *Anilocra frontalis, A. physodes, Nerocila bivittata, N. orbignyi, N. maculata, Ceratothoa parallela, C. oestroides, C. oxyrrhynchaena, C. italica,* for the first time in the Gulfs of Béjaïa and Jijel. *Ceratothoa italica* is new for the Algerian fauna.

We have identified the host fish for all the cymothoids that we have collected. For some parasites (*A. frontalis*, *N. bivittata*, *C. oestroides*, *C. oxyrrhynchaena* and *C. parallela*), our results are in agreement with the characteristics of specificity known for these species. For others (*A. physodes*, *N. orbignyi*, *N. maculata* and *C. italica*), our data seem to indicate possible variation of the specificity according to the prospected area. It is particularly obvious for *N. maculata;* host of this species, previously unknown in Algeria, is now identified and differs from those previously reported from other Mediterranean zones.

Prevalences are rather weak and correspond to a low general infestation rate, varying, however, according to the host species. Therefore, our results are quite similar to some data about Tunisia. Infestation rates are, moreover, even weaker in the Tamelaht lagoon and the Soummam Oued.

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