

**Short Communication*****Serranus cabrilla* (Linnaeus, 1758) (Perciformes, Serranidae )  
a new host record for *Nerocila orbigny* (Guérin-Mèneville,  
1832) (Isopoda, Cymothoidae)****Özcan T.<sup>1\*</sup>; Kirkim F.<sup>2</sup>; Sakalı U.<sup>3</sup>**

Received: February 2012

Accepted: June 2012

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**Key words:** *Nerocila orbigny*, *Serranus cabrilla*, New host, Eastern Mediterranean,  
Turkey

Cymothoids are among the largest parasites of fishes in the world. These isopods associate with many commercially important fish species and attach themselves to the body or fins of the fishes (Brusca, 1981). The isopods cause significant economic losses to fisheries by killing, stunting, or damaging these fishes (Ravichandran *et al.*, 2009).

Cymothoidae is an ectoparasitic family of Isopoda. Cymothoid isopods are ectoparasites of marine, brackish and freshwater teleost fishes (Trilles, 1994; Ferri *et al.*, 2008; Kirkim *et al.*, 2009). The genus *Nerocila* is one of the nine genera of the family Cymothoidae distributed in the Mediterranean

(Trilles, 1968, 1986). To date, three species (*N. bivittata*, *N. maculata*, *N. orbigny*) belonging to the genus *Nerocila* have been reported in Turkish coasts. *Nerocila orbigny* occurs both in coastal and pelagic waters, as well as in the bottom zone, infesting fishes from the families *Pleuronectidae* and *Soleidae* (Rokicki, 1985) and (Mugilidae) as well (Trilles, 1975a, 1975b, 1994; Bruce, 1987; Öktener and Trilles, 2004). However, this species has been reported from several fish species (Trilles, 1975a, 1975b, 1994; Bruce, 1987; Charfi-Cheikhrouha *et al.*, 2000; Öktener and Trilles, 2004; Ramdane *et al.*, 2007; Kayış and Ceylan, 2011).

*N. orbigny* has been known from all of the Mediterranean Sea (Trilles, 1994), along the Black Sea coast of Turkey (Öktener and Trilles, 2004; Kayış and Ceylan, 2011), Morocco (Dollfus and Trilles, 1976), Tunisia (Trilles and Raibaut, 1973; Charfi-Cheikhrouha *et al.*, 2000) and Algeria (Ramdane *et al.*, 2007). *N. orbigny* is also known to penetrate into freshwaters along the Atlantic seaboard of South America (Brusca, 1981).

The serranid fish, *Serranus cabrilla* (Linnaeus, 1758) (the comber) is a commercial species and has a wide distribution (north Atlantic Sea, North Sea and Mediterranean Sea) (Politou and Papaconstantinou, 1995; Torcu-Koc *et al.*, 2004). The comber is a demersal species found on rocks, and on sandy and muddy bottoms at depths of 1-500 (Jardas, 1996). This is the main species captured by trawlers fishing in the Aegean Sea of the Turkish coast (Torcu-Koc *et al.*, 2004). *N. orbigny* has been determined for the first time on *S. cabrilla* from the Turkish coasts within the frame of the present study.

*S. cabrilla* (Perciformes, Serranidae), was captured by commercial trawl from the Samandağı (between 36°30'50" N 35°59'60" E and 36°35'23" N 36°59'57" E) coast of Turkey on 28 March 2011 (Fig. 1). The sample obtained from a sandy-silt bottom at a depth of between 20 and 25 m. The parasitic isopod was collected from the fish and immediately preserved in 70% alcohol. Data on

collecting period, sampling area, name, and the size of the host were recorded, and the parasite's locations on the captured fish were noted. Identification and morphometric characteristics of the isopod follows Trilles *et al.* (1989). The specimens, including the photographed ones, were preserved in 4% formalin and deposited in the Museum of the Faculty of Fisheries, Mustafa Kemal University, Iskenderun-Hatay (MSM) (Collection No: MSM-MAL/2011-03).

The salinity values ranged from 37.9 ‰ to 39.1 ‰, and the maximum temperature value recorded was 18.7 °C. *Nerocila orbigny* (Guérin-Mèneville, 1832) (Fig. 2). Material examined: one ♂, (total length: 2.2 cm) MSM-MAL/2011-03; trawl, 20-25 m, sandy-silt bottom, on caudal fin of the serranid, *S. cabrilla* (total length: 12.4 cm) from the Samandağı coasts.

#### *Distribution and ecology*

It is widely distributed in the Mediterranean Sea, tropical and southern Atlantic, South Africa, Australia, New Zealand, Red Sea, North Pacific, East Pacific, western North Atlantic and in the Black Sea coast of Turkey (Bruce, 1987; Trilles, 1994; Öktener and Trilles, 2004). It can penetrate into fresh waters (Brusca, 1981), at depths ranging from the shore to 500 m (Jardas, 1996).

Host data: *N. orbigny* generally infects Mugilidae species heavily (Trilles, 1994). The species has been previously reported from several fish species and families such as; *Scorpaena*

*porcus* (Ferri *et al.*, 2008); *Mugil cephalus*, *Crenilabrus pavo*, *Trigla lyra* (Ramdane *et al.*, 2007); *Liza ramada*, *L. saliens*, *L. aurata*, *Chelon labrosus*, *Dicentrarchus labrax*, *Solea solea*, *Serranus scriba*, *Diplodus annularis* (Charfi-Cheikhrouha *et al.*, 2000); *D. labrax* (Bragoni *et al.*, 1983, 1984; Horton and Okumura, 2001); *S. solea* (Kayış and Ceylan, 2011); *L. aurata* (Merella and Grippa, 2001; Öktener and Trilles, 2004); *Pleuronectidae* and *Soleidae* (Rokicki, 1985); *Platichthys flesus* (Cavaleiro and Santos, 2009); *Chelidonichthys kumu*, *Chrysophrys auratus*, *Acanthopagrus butcheri*, *Sillago bassensis*, *Pomatomus saltatrix*, *Mola mola*, *Girella tricuspidata*, *Dactylopera orientalis*, *Pseudocaranx dentex*, *Callorhynchus mili* (Bruce, 1987); *Mugil cephalus*, *M. auratus*, *M. capito* and *M. labrosus*, *Alosa fallax nilotica*, *D. labrax* (Trilles and Raibaut, 1973); *Batrachus*

*didactylus* and *Solea senegalensis* (Dollfus and Trilles, 1976). According to Moreira and Sadowsky (1978) this species was reported on *Callorhynchus mili* and *Chimaera* sp. as well by Hale (1926, 1940).

Besides, Trilles *et al.* (1989) summarised the known hosts *Liza ramada*, *L. saliens*, *L. aurata*, *Chelon labrosus*, *Lophius budegassa*, *Syphonostomes*, *M. auratus*, *M. capito*, *M. chelo*, *M. labrosus*, *M.cephalus*, *Platichthys flesus*, *D. labrax*, *Salmo trutta*, and *Tilapia galilea* for *N.orbigyni*.

In Turkey, it has been reported from the operculum and pectoral fin of the sole (*S. Solea*) in the Black Sea (Kayış and Ceylan, 2011), on the operculum of *L. aurata* (Öktener and Trilles, 2004) in the Black Sea, and in *D. labrax* of the Aegean Sea (Horton and Okumura, 2001).



Figure 1: Map of the study area.



**Figure 2:** *Nerocila orbigny* on a caudal fin of *Serranus cabrilla* in the Levantine Sea (A, B).

The parasite cymothoid isopod, *N. orbigny* has been found on the caudal fin of *S. cabrilla* (Perciformes, Serranidae). Only one serranid fish species (*Serranus scriba*) belonging to the genus *Serranus* is known to be infested by *N. orbigny* up to date. *S. cabrilla* have not been reported to be infested by *N. orbigny* so far. *S. cabrilla*, the serranid fish species is a new host recorded for this parasite. It is clear that the serranid fish species are accidental or an occasional potential host for *N. orbigny*.

The authors thank Suat captain and the crew of the vessel “Umut” for their help in collecting the material.

## References

- Bragoni, G., Romestand, B. and Trilles, J.P., 1983.** Parasitoses à Cymothoïdien chez le loup (*Dicentrarchus labrax* Linnaeus, 1758) en élevage. II. Ecophysiologie parasitaire dans le cas de l'étang de Diana (Haute-Corse). *Annales de Parasitologie Humaine et Comparee*, 58(6), 593-609.(English Abstract).
- Bruce, N.L., 1987.** Australian species of *Nerocila* Leach, 1818 and *Creniola* n. gen. (Isopoda: Cymothoidae), crustacean parasites of marine fishes. *Records of the Australian Museum*, 39, 355-412.
- Brusca, R.C., 1981.** A monograph of the isopode cymothoidae (Crustacea) of the eastern Pacific. *Zoological Journal of the Linnean Society*, 73, 117-199.
- Cavaleiro, F.I. and Santos, M.J., 2009.** Seasonality of metazoan ectoparasites in marine European flounder *Platichthys flesus* (Teleostei: Pleuronectidae). *Parasitology*, 136, 855-865.
- Charfi-Cheikhrouha, F., Zghidi, W., Ould Yarba, L. and Trilles, J.P., 2000.** Les Cymothoidae (Isopodes parasites de poissons) des côtes

- tunisiennes: ´ecologie et indices parasitologiques. *Systematic Parasitology*, 46, 143-150.
- Dolfus, R.P. and Trilles, J.P., 1976.** A propos de la collection RP Dollfus, mise au point sur les Cymothoidiens jusqu'`a pr´esent r´ecolt´es sur des T´el´eost´eens du Maroc et de l'Alg´erie (Collection of RP Dollfus on Cymotoids collected on Teleost fish in Morocco and Alger). *Bulletin du Museum National d'Histoire Naturelle, Paris, 3e s´er., n° 390, Zoologique*, 272, 821- 830.
- Ferri, J., Petri´c, M., Mati´c-Skoko, S. and Dul´ci´c, J., 2008.** New host record, black scorpionfish *Scorpaena porcus* (Pisces, Scorpaenidae) for *Nerocila orbigny* and *Ceratothoa parallela* (Crustacea, Isopoda, Cymothoidae). *Acta Adriatica*, 49, 255-258.
- Hale, H.M., 1926.** Review of Australian isopods of the Cymothoid group. Part 11. *Transactions of the Royal Society of South Australia*, 50, 201-234.
- Hale, H.M., 1940.** Report on the Cymothoid Isopoda obtained by the F.L.S. HEndeavour" on the coasts of Queensland, New South Wales, Victoria, Tasmania, and South Australia. *Transactions of the Royal Society of South Australia*, 64(2), 288-304.
- Horton, T. and Okamura, B., 2001.** Cymothoid isopod parasites in aquaculture: a review and case study of a Turkish sea bass (*Dicentrarchus labrax*) and sea bream (*Sparus auratus*) farm. *Disease of Aquatic Organisms*, 46, 181-188.
- Jardas, I., 1996.** Jadranska ihtiofauna. (Adriatic ichthyofauna). *Skolska knjiga*, Zagreb (in Croatian). 553P.
- Kayıř, ř. and Ceylan, Y., 2011.** First report of *Nerocila orbigny* (Crustacea, Isopoda, Cymothoidae) on *Solea solea* (Teleostei, Soleidae) from Turkish Sea. *Turkish Journal of Fisheries and Aquatic Sciences*, 11, 167-169.
- Kırkım, F., Özcın, T. and Katađan, T., 2009.** Four species of parasitic isopods (Isopoda, Cymothoidae) new to the fauna of Cyprus. *Crustaceana*, 82(8), 1079-1085.
- Merella, P. and Grippa, G., 2001.** Metazoan parasites of grey mullets (Teleostea: Mugilidae) from the Mistras Lagoon (Sardinia, western Mediterranean). *Scientia Marina*, 65(3), 201-206.
- Moreira, P.S. and Sadowsky, V., 1978.** An annotated bibliography of parasitic Isopoda (Crustacea) of Chondrichthyes. *Boletim do Instituto Oceanografica, Sao Paulo*, 27(2), 95-152.
- Öktener, A. and Trilles, J.P., 2004.** Report on the Cymothoids (Crustacea, Isopoda) collected from marine fishes in Turkey. *Acta Adriatica*, 45(2), 15-23.
- Politou, C.Y. and Papaconstantinou, C., 1995.** Age and growth of comber, *Serranus cabrilla* (L., 1785) in the Thracian Sea and the Thermaikos Gulf (Northern Greece). *Rapports et Procès-Verbaux des*

- Rèunions, *Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée*, 34, 253.
- Ramdane, Z., Bensouila, M.A. and Trilles, J.P., 2007.** The Cymothoidae (Crustacea, Isopoda), parasites on marine fishes, from Algerian fauna. *Belgian Journal of Zoology*, 137(1), 67-74.
- Ravichandran, S., Rameshkumar, G. and Kumaravel, K., 2009.** Variation in the morphological features of isopod fish parasites. *World Journal of Fish and Marine Sciences*, 1(2), 137-140.
- Rokicki, J., 1985.** Biology of adult Isopoda (Crustacea) parasitizing fishes of North-west africa shelf. *Acta Ichthyologica Et Piscatoria*, 15(1), 95-122.
- Torcu Koc, H., Türker Cakır, D. and Dulcic, J., 2004.** Age, growth and mortality of the comber, *Serranus cabrilla* L. (Serranidae) in the Edremit Bay (NW Aegean Sea, Turkey). *Cybiurn*, 28(1), 19-25.
- Trilles, J.P., 1968.** Recherches sur les Isopodes Cymothoidae des côtes Françaises. Dissertation, University of Montpellier France, N°enregistrement CNRSAO, 2305,1: Bionomie et Parasitisme et Vol. 2: Biologie générale et sexualité, 793 pp. Deuxième thèse, Systématique et Faunistique, 181P.
- Trilles, J.P. and Raibaut, A., 1973.** Sur les Cymothoidae (Isopoda, Flabellifera) parasites de poissons marins de Tunisie (2ème note) (Cymothoids (Isopods, Flabellifera) fish parasites from Tunis; 2nd note). *Bulletin du Museum National d'Histoire Naturelle, Paris*, 3e sér, n° 144 *Zoologie*, 88, 273-281.
- Trilles, J.P., 1975a.** Les Cymothoidae (Isopoda, Flabellifera) des collections du Museum National d'Histoire Naturelle de Paris. II. Les *Anilocridae* Schioedte et Meinert, 1881. Genre *Anilocra* Leach, 1818 et *Nerocila* Leach, 1818. *Bulletin du Museum National d'Histoire Naturelle, Paris*, 290, 303-346.
- Trilles, J.P., 1975b.** Les Cymothoidae (Isopoda, Flabellifera) des cotes francaises. H. Les *Anilocridae* Schiodte et Meinert, 1881. Genres *Anilocra* Leach, 1818, et *Nerocila* Leach, 1818. *Bulletin du Museum National d'Histoire Naturelle, Paris*, 3e serie, 290, *Zoologie*, 200, 347-378.
- Trilles, J.P., 1986.** Les Cymothoidae (Crustacea, Isopoda, Flabellifera) d'Afrique. *Bulletin du Museum National d'Histoire Naturelle, Paris*, 4e sér., 8, section A. n° 3, pp. 617-636.
- Trilles, J.P., Radujkovic, B.M. and Romestand, B., 1989.** Parasites des poissons marins du Monténégro: Isopodes. *Acta Adriatica*, 30, 279-306.
- Trilles, J.P., 1994.** Les Cymothoidae (Crustacea, Isopoda) du Monde (Prodrome pour une Faune). *Studia Marina*, 21/22(1-2), 1-288.