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NEW INFORMATION ON THE HOSTS AND DISTRIBUTION OF THE MARINE FISH LEECHES *TRACHELOBDELLA LUBRICA* AND *PONTOBDELLA MURICATA* (CLITELLATA, HIRUDINIDA)

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New Information on the Hosts and Distribution of the Marine Fish Leeches *Trachelobdella lubrica* and *Pontobdella muricata* (Clitellata, Hirudinida). Öktener A., Utevsky S. Yu. — Fish leeches collected in the Aegean Sea, the Sea of Marmara and the Black Sea were examined. *Trachelobdella lubrica* (Grube, 1840) was recorded for the first time from the ballan wrasse *Labrus bergylta* (Osteichthyes, Labridae), marine bream *Diplodus vulgaris* (Osteichthyes, Sparidae) and the grouper *Epinephelus aeneus* (Osteichthyes, Serranidae) from aquiculture. The leeches of this species were found in the Aegean Sea and the Sea of Marmara on the body surface, in the mouth and gill cavities of their hosts. Leeches identified as *Pontobdella muricata* (Linnaeus, 1758) were collected from the thornback ray *Raja clavata* (Chondrichthyes, Rajidae) in the Black Sea.

Key words: Aegean Sea, Sea of Marmara, Black Sea, Annelida, Clitellata, Hirudinida, Piscicolidae, parasites.

Новые сведения о хозяевах и распространении морских рыбьих пиявок *Trachelobdella lubrica* и *Pontobdella muricata* (Clitellata, Hirudinida). Октенер А., Утевский С. Ю. — Исследованы рыбьи пиявки, собранные в Эгейском, Мраморном и Черном морях. *Trachelobdella lubrica* (Grube, 1840) впервые указана для губана — *Labrus bergylta* (Osteichthyes, Labridae), морского леща *Diplodus vulgaris* (Osteichthyes, Sparidae) и групера — *Epinephelus aeneus* (Osteichthyes, Serranidae) из аквакультуры. Пиявки этого вида были обнаружены в Эгейском и Мраморном морях на поверхности тела, в ротовой и жаберной полостях своих хозяев. В Черном море с морской лисицы *Raja clavata* (Chondrichthyes, Rajidae) были собраны пиявки, относящиеся к виду *Pontobdella muricata* (Linnaeus, 1758).

Ключевые слова: Эгейское море, Мраморное море, Черное море, Annelida, Clitellata, Hirudinida, Piscicolidae, паразиты.

Introduction

Fish leeches affect the health of their hosts largely through blood-feeding activities. Piscicolids can be vectors of pathogenic protozoans. Both freshwater and marine fish leeches are known to transmit haemoflagellates of the genera *Trypanosoma* Grube, 1843 and *Cryptobia* Linnaeus, 1758 and the intracellular haemogregarines and piroplasmae to their fish hosts (Burreson, 1995). Nevertheless, marine fish leeches of the eastern Mediterranean and the Black Sea are insufficiently explored. Despite some studies, e. g., H. Ergüven and A. Candan (1992), Sağlam et al. (2003) and A. Akmirza (2004), the marine piscicolid fauna of Turkey still awaits a thorough inventory.

Material and methods

Leeches were found on various fishes in Turkish coastal waters. The ballan wrasse *Labrus bergylta* Ascanius, 1767 was caught by gill net from the Bosphorus, the Sea of Marmara; the common two-banded seabream *Diplodus vulgaris* (Geoffroy Saint-Hilaire, 1817), by gill net from Torba Limanı, the Aegean Sea, (37°04' N,

27°20' E); the dusky grouper *Epinephelus aeneus* (Geoffroy Saint-Hilaire, 1817) was bought from a farm at Akbük, the Aegean Sea (37°22' N, 27°26' E). Pontobdelline leeches collected by fishermen from the thornback ray *Raja clavata* Linnaeus, 1758 in the western Black Sea were also examined. Altogether 85 fish individuals were examined for ectoparasites in summer 2006 (tabl. 1). Leeches were preserved in 70% ethanol and identified using descriptions and keys compiled by Llewellyn (1966), Epshtein (1973) and Sawyer (1986). The leech specimens collected are deposited in the personal collection of A. Öktener (Provincial Directorate of Agriculture) and the collection of the Department of Zoology and Animal Ecology, Karazin National University of Kharkiv.

Results and discussion

Seven leech specimens from the Aegean Sea and the Sea of Marmara were assigned to the species *Trachelobdella lubrica*. Three piscicolids collected in the Black Sea were identified as *Pontobdella muricata*. Host data and quantitative characteristics of infection are presented in table 1.

PISCICOLIDAE

Trachelobdella lubrica (Grube, 1840)

External characters and measurements. The external characters (fig. 1) of the examined specimens are in agreement with the description provided by Epshtein (1973: fig. 1, p. 429). The length of the specimens varies from 5.5 mm to 10.8 mm (n = 4).

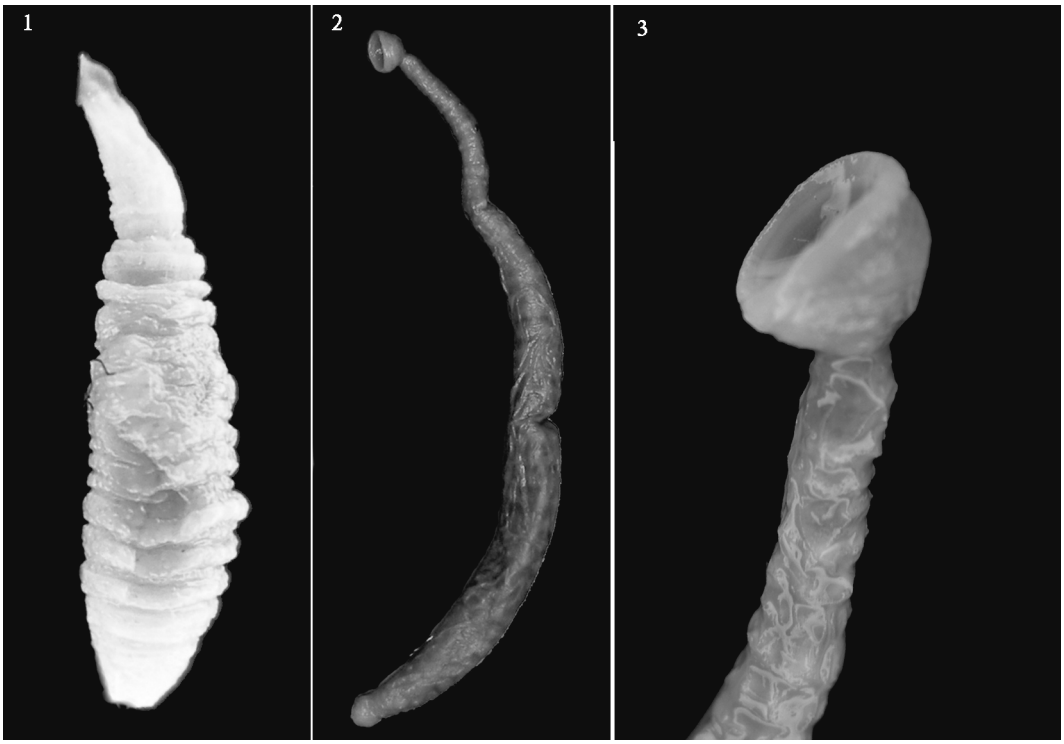

Fig. 1. *Trachelobdella lubrica* collected in the Aegean Sea.

Рис. 1. *Trachelobdella lubrica*, обнаруженная в Эгейском море.

Fig. 2. *Pontobdella muricata* collected in the Black Sea.

Рис. 2. *Pontobdella muricata*, обнаруженная в Черном море.

Fig. 3. The anterior end of a specimen of *Pontobdella muricata* from the Black Sea. The marginal fringe can be seen on the oral sucker.

Рис. 3. Передний конец тела одного из особи *Pontobdella muricata* из Черного моря. На передней присоске видна оторочка.

Table 1. Host data, quantitative characteristics of infection and localities of fish leeches found in Turkish coastal waters

Таблица 1. Данные о хозяевах, количественные характеристики инвазии и места находок пиявок из прибрежных вод Турции

Host	Site	Number of hosts examined	Number of hosts infected	Number of leeches collected	Mean intensity	Prevalence, %	Locality
			Trachelobdella lubrica				
Epinephelus aeneus	–	3	1	2	2	33.3	Akbük, Aegean Sea
Labrus bergylta	gill cavity	17	2	2	1	11.7	Sea of Marmara
Diplodus vulgaris	mouth/gill cavity	53	3	3	1	5.5	Torba Limani, Aegean Sea
			Pontobdella muricata				
Raja clavata	body	12	2	3	1.5	16.6	Black Sea

The fifth specimen is hard to measure as it was distorted due to fixation in strong ethanol. However, its size falls in that range. The coloration is nearly missing, only small dots can be discernable on the dorsal surface of the urosome. Neither eyes nor ocelli can be found. The body is distinctly divided into the trachelosome and the urosome. The trachelosome is slender while the urosome looks inflated and filled with the blood. Pulsatile vesicles can be found in some of the specimens. If present, individual vesicles are missing because of a severe contraction and distortion of the body. The mid-body segment consists of three annuli, the further subdivision of the annuli cannot be traced. The shape of the caudal sucker is very characteristic: it is contracted and faces directly posteriorly.

Distribution and hosts. *Trachelobdella lubrica* resides in the gill chambers of a number of teleost fishes in warm temperate and tropical seas around the world. This species has been recorded from various fish hosts of the families Serranidae, Priacanthidae, Pomacentridae, Sciaenidae, Scorpaenidae etc. (Sawyer, 1986; Sağlam et al., 2003; Williams et al., 1994; Garcés, 1995). *Trachelobdella lubrica* occurs in the Mediterranean and Arabian Sea, coastal waters of west coast of Africa, South Africa, Caribbean, South Carolina, Australia and in the vicinity of the Hawaii Islands (Epshtein, 1973; Sawyer, 1986).

Remarks. Three species of marine fish leeches have been already reported from Turkey (Öktener, 2005). *Pontobdella muricata* Linnaeus, 1758 was collected on *Raja* sp. from the Sea of Marmara by Ergüven and Candan (1992) and on *Torpedo marmorata* and *Raja clavata* from the Aegean Sea by Sağlam et al. (2003); *Pontobdella loricata* (Harding, 1924) from *Trachinus draco* in the Aegean Sea by Akmirza (2004); *Trachelobdella lubrica* was recorded from *Scorpaena porcus, Scorpaena scrofa* in the Aegean Sea by Sağlam et al. (2003). In our study, *T. lubrica* was recorded for the first time from *Labrus bergylta*, *Diplodus vulgaris* and *Epinephelus aeneus.*

Trachelobdella lubrica has a wide, circumtropical range and is parasitic on many fish species. More studies should be done to compare biology, life cycles and taxonomical statuses of the great diversity of populations of this species

PISCICIOLIDAE

Pontobdella muricata (Linnaeus, 1758)

External characters and measurements. The length of the two speciemens are 90 and 125 mm. The coloration is almost missing except for minute black dots scattered about the body surface (fig. 2). Eyes are not present. The oral sucker bears a marginal fringe (fig. 3). Though pontobdelline leeches usually have the very distinct annulation, it is impossible to count annuli of mid-body segments in the two specimens because of poor fixation. However, we still assign the specimens to *Pontobdella muricata* based on the body shape, large papillae, marginal fringe and biogeographical considerations (see below).

Distribution and hosts. According to Sawyer (1986), *P. muricata* is known from the Mediterranean and Black Sea, the north-eastern Atlantic to Spitzbergen and southern Greenland. The hosts of *P. muricata* include many species of rays and sometimes plaice (Llewellyn, 1966). It is the only marine fish leech recorded from the Black Sea. Obviously, the occurrence of *P. muricata* in that part of the world should be studied in detail.

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