

انتشار بعض الطفيليات الخارجية في مزرعة الأسماك الخاصة بمحافظة بابل
فاضل حسن علوان الدليمي ، مركز البحوث البيئية / جامعة بابل
أسامة عبد الكاظم العجيلي ، كلية التربية الأساسية / جامعة بابل
احمد خضير عبيس الحميري ، كلية العلوم للبنات ، جامعة بابل

Prevalence of some Ectoparasites in the Privete Farm Fish in Babylon Province.

Fadhil H.A. Al-Dulaimi, Environmental research center/Babylon University

Ausama Abed Alkadhum Alajeely, Basic Education College/Babylon University

Ahmed . K . A . Al-Hamairy, Science college of women , Babylon University

fadhelhasan17@gmail.com

Abstract:

Five ectoparasites were gathered during the time in fist of october 2018 to first of June 2019 from fish of privete ranch in Babylon Area in waters of Iraq: Four scavangers [*Ergasilus mosulensis* and *Pennella instructa* (Copepoda), *Ceratothoa steindachneri* (Isopoda) and *Argulus foliaceus* (Branchiura)] and one *Annelida* (Piscicola geometra) were found. The species, *E. mosulensis*, *P. instructa* and *C.steindachneri* have been accounted for first time in Iraq waters in this lake , and *A. foliaceus* and *P. geometra* for the time from the Al-Mashroa Lake in Babylon Province .

Key Words: *Liza abu, Heteropeneustes fossilis, Hypophthalmichthys molitrix, Ctenopharyngodon idellus, Cyprinus carpio*, ectoparasites

الملخص

تم جمع خمسة طفيليات خارجية خلال الفترة من الاول من تشرين الاول 2018 إلى الأول من حزيران 2019 من أسماك مزرعة اهلية في منطقة بابل في مياه العراق .اربعة من الاسماك القشرية المتغذية على سطح الاسماك وهي [*Ergasilus mosulensis* and *Pennella instructa* (Copepoda), *Ceratothoa steindachneri* (Isopoda) and *Argulus foliaceus* (Branchiura)]

اضافة الى وجود احد الطفيلي (*Annelida* (Piscicola geometra)

تم كشفها لأول مرة في مياه *E. mosulensis*, *P. instructa* and *C.steindachneri* ان الانواع التي هي العراق هذه المزرعة وكذلك الانواع من هذه الطفيليات التي هي ايضا موجودة في مزرعة المشروع الاهلية في محافظة بابل . *A. foliaceus* and

P. geometra

Introduction:

There are over 150 described ergasilid (Crustacea, Copepoda, Ergasilidae) species. Most of them are found in freshwaters with only 23 species occurring in estuarine or coastal marine habitats. Nearly, all adult females are parasitic on teleost fishes, typically attaching to the gill filaments with their large subchelate antennae (5). The genus *Pennella* Oken, 1816(Copepoda, Pennellidae) include the largest parasitic crustacea, and except for a single species infecting the blubber and musculature of cetaceans, adults are embedded in the flesh of marine teleosts (3).Cymothoids (Crustacea, Isopoda, Cymothoidae) are ectoparasites of marine, freshwater or brackishwater teleost fishes.Numerous families and species of fishes, including many

of commercial importance are infected. They settle on the skin, in the buccal cavity, the gill chambers or sometimes in a pouch (29) and they are hematophagous feeding on their host blood and sometimes on tissues (13, 25). Argulids (Crustacea, Branchiura, Argulidae) are excellent swimmers. Adults and larvae can easily migrate among many hosts. Branchiurans can induce morbidity and mortality in captive fish populations (4, 17, 32). Leeches (Annelida, Hirudinea, Piscicolidae) are considered as ectoparasites and they are found virtually anywhere on the external body surface of fishes e.g., body surface, in mouth, branchial chamber or cloaca. They can induce tissue damage, osmoregulatory problems, and act as vectors of pathogens e.g., blood-born protozoa (6).

MATERIALS AND METHODS:

Tests were gathered in Iraq during 2014-2015. Among host angles, *Liza abu*, *Chlorophthalmus agassizi* and *Cyprinus carpio* were discovered utilizing gill nets; *Xiphias gladius* were gotten from an anglers. Parasites were safeguarded and fixed in 70% liquor. Examples were analyzed and cleared in lactic corrosive. Parasites were coded utilizing micrometer. Recognizable pieces of proof and morphometric attributes were performed agreeing especially to: Ho *et al* (15), Rahemo (24) for *E. mosulensis*; Hogans (10), Kabata (16), Kabata (18), Yamaguti (32) for *P. instructa*; Horton (11), Trilles (28) for *C. steindachneri*; Bykhovskaya-Pavlovskaya (7), Rushton-Mellor (26) for *A. foliaceus*; Burreson (6) for *P. geometra*. The parasites analyzed, their hosts, geological range and parasitological file (Table 1) are given .

RESULTS AND DISCUSSION:

Table (1): The percentage of infection fishes that infected with different parasites .

Parasite	No. of fish investigated	No. of fish infested	Prevalence%	Intensity (min-max)	Mean Intensity	Total number of parasites
<i>A. foliaceus</i>	135 (Ci)	60	44.4	1-5	9.03	542
<i>P. geometra</i>	135 (Cc)	62	45.9	1	6.46	401
<i>C. steindachneri</i>	51 (Hm)	12	23.5	1	0.83	10
<i>E. mosulensis</i>	20 (La)	11	55.0	4-15	9.4	104
<i>P. instructa</i>	4 (Hf)	1	25.0	1-3	7	7
total	345	146	42.3	-	7.3	1064

(La) : *Liza abu*, (Hf) *Heteropeneustes fossilis* (Hm) *Hypophthalmichthys molitrix*,

(Ci) *Ctenopharyngodon idellus* (Cc) : *Cyprinus carpio*

The parasite of *Ergasilus mosulensis* past to the Crustacea: Copepoda: Ergasilidae. This parasite was Gathered from the gill fibers of *Liza abu* Heckel, 1843 (Mugilidae; mullet) from Al-Mashro, a Lake. What's more, Dissemination in Euphrates and Tigris Waterway, Iraq (15, 24). The parasite of *Ergasilus mosulensis* lean toward Hosts was *Liza abu* in this lake (15, 24). Also, most loved Size with Absolute length , 7-9 cm. the

parasite *E. mosulensis* was Comments fundamentally portrayed by a guitarshaped cephalothorax with foremost flap. In Iraq, ergasilids were accounted for from both freshwater, marine and bitter water angles. *E. sieboldi*, *E. briani* and *E.sp* were as of late recorded from thirteen freshwater fish species (20). About marine and harsh ergasilids, there are two reports: *E. nanus* on mugilids (1, 21); *E. gibbus* on anguilla (2). *E. mosulensis* is accounted for without precedent for Iraq. This species was as of late depicted (15, 24). Their material were from Iraq freshwaters (water Waterway iraqi) associated with Euphrates stream arrangement of Iraq. The parasite of *Pennella instructa* past to the Crustacea: Copepoda: Pennellidae to make a sign or sign that Wilson, 1917 . The Material analyzed of this parasite was Expelled from the base of the butt-centric and pectoral balances and in the stomach strong tissue of *Xiphias gladius* Lin.,1758 (Xiphiidae; swordfish) from Al-Mashro, a lake in Babylon Region . a portion of this parasites were Dispersion in Mediterranean Ocean, Pacific Sea and Atlantic Sea (9, 19, 27, 31, 32).and favor Hosts *Xiphias gladius* and *Istiophorus platypterus* (9, 10, 19, 27, 31, 32).this parasite favourte tach with Size in Absolute length, 3 - 5cm. The parasite of *Pennella instructa* Comments with This species is for the most part described by a long trunk, somewhat thicker posteriorly, transversely striated third; stomach brush like that of *Pennella filosa*; belly likewise subcylindrical, in accordance with trunk, gave sidelong columns of fine procedures framing stomach trunk. One pennelid animal groups (*Lernaeolophus sultanus* from mouth base of *Diplodus vulgaris*.) was as of late gathered in Turkish waters (22). Grown-ups *P. instructa* were discovered implanted in the substance of marine teleosts particularly huge fish for example swordfish This species is recorded without precedent for the Iraq. The parasite of *Ceratothoa steindachneri* past to the Crustacea: Isopoda: Cymothoidae that allude from Koelbel, 1878 . This parasite was inspected and gathered from the mouth of *Chlorophthalmus agassizi* Bonaparte, 1840 (Chlorophthalmidae, shortnose greeneye) and see with Circulation in world waters like Atlantic Sea, Mediterranean Ocean, Adriatic Ocean (11, 30). The Hosts most loved of this parasite was *Serranus hepatus*, *S. scriba*, *S. cabrilla*, *S. atricauda* *Raja asterias*, *R. polystigma*, *R. alba*, *Diplodus vulgaris*, *Chlorophthalmus agassizi* *Echiichthys vipera* (8, 11, 12, 14, 30). This parasite like to append with the Size of Complete length, 2-6 cm. Comments of this parasite in Cephalon profoundly bended towards platform at the degree of the eyes; pereopods without conspicuous extensions on the merus. Ökterner and Trilles (23) recorded four *Ceratothoa* species e.g., *C. oestroides*, *C. parallela*, *C. italica*, *C. capri* from marine fishes of Turkey. Just because, *C. steindachneri* is accounted for in Turkish waters. *Argulus foliaceus* past to the Crustacea: Branchiuran: Argulidae Lin.,1758 . The material analyzed for this parasite was Expelled from the body surface and balances of *Cyprinus carpio* Lin.,1758 (Cyprinidae, carp) .This paraites were Appropriation for the most part in Europe, Focal Asia, North America (7, 26). What's more, most loved with Hosts were freshwater angles, particularly Cyprinidae (7, 26). What's more, taching with a wild region and Size were Complete length, 3-7 cm; width, 2.5-5 cm . The Comments of all parasites That most attributes

of this species are: urosome with adjusted projections secured possibly with little spines; back incisure of urosome not reach in focus; foremost edge of cephalothorax shaping expansive distension delimited horizontally by shallow furrows. In Turkey, *A. foliaceus* Lin., 1758 was accounted for from 9 distinct hosts (counting *Cyprinus carpio*) (20). This species is recorded without precedent for Al-Mashroa Lake. *Pisciola geometra* past to the Annelida, Hirudinea, Piscicolidae Lin., 1761 . also, the material analyzed for this parasite were Expelled from the body surface and blades of *Cyprinus carpio* Lin., 1758 (Cyprinidae, carp) . The Appropriation of this parasites that in Europe, Focal Asia, North America (6, 7). Furthermore, favourite Has in freshwater angles, particularly Cyprinidae (6, 7). This parasite taching with the Size in Total length, 25 mm; width, 3 mm . The Comments of this parasites were Body around 10-11 times as long as wide, in spite of the fact that in certain examples this proportion progresses toward becoming 20-25; front piece of the body just marginally less wide than back; caudal sucker roughly 1.5 occasions as enormous as body width. *P. geometra* Lin., 1761 was recently detailed from six host species (*rutilus*, *Scardinius erythrophthalmus*, *Blicca bjoerkna*, *tinca*, *Esox lucius*, *Barbus rajanorum mystaceus*) (20). The species is recorded without precedent for Al-Mashroa Lake; The *C. carpio* is another host for *P. geometra* in Iraq.

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