RECORDS OF CLADOCERA (CRUSTACEAN) FROM AL – NAJAF FRESHWATER SYSTEM, AL-NAJAF PROVINCE, IRAQ

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Abstract

A total of eight species of cladocera have been identified from some pools and drainage canals in Al – Najaf province .

Two species , *Pleuroxis trigonellus* , and *Scapholeberis rammneri* , are new records for Iraq .

Introduction

Cladocera play an important role in the aquatic food chain. Many species were recorded from different areas of Iraq (Gurney, 1921; Mohammad, 1965, 1980, 1986; Samirnov , 1976 ; Al – Saboonchi , et al , 1986 and Ageal , 1996)

The present is an attempt to add additional record and distribution of cladocera in other Iraqi water bodies , and for the first time to give an description for the most diagnostic features of record species .

Materials & Methods

Samples were taken from three stations

First station :

A small pool alongside Al – Kufa , Babylon main road , near Kufa sailo . About 150 m in length and 50 m in width its depth ranged between (0.3–15) m . It contain thick growth of vegetation consisting mainly of filamentous green algae (*Spirogera* and *Cladophora*) and, floating aquatic plant (*Lymnaea*) .

Second Station :

A dranage canal along side Al – Kufa – babylon tourist road . About 5 km length and (1–2.5) m in width and its depth ranged between about (0.5 – 2.0) m . The predominant flora of this canal include *Cyprus* , potamogeton and mats of filamentous algae .

Third Station

A branch from Al– Hafar drainage canal, near Al– Kufa , - Al– Abassiya main road , 2 km long and about 1–1.5 m width and about 0.5–1.75 m in depth a weedy canal and *Cyprus* and potamogeton spread along side .

Samples of zooplankton were collected during January – March 2004 by the use of No. 55 plankton net (mesh size, Ca. 60 Mm) , where the cladocera population was large in number of individual, the species were taken by dipping a large mouthed jar in the water , the sample were preserved in 5 % formalin – sugar solution (Haney and Hall , 1973) .

Drawing of the animals were made in camera lucida showing the distinguishing characteristics among the species .

Results And Discussion

A systematic list of the species which has been identified during the present study is given below :

Order : Cladocera Calman
Family : Daphnidae Straus
Genus : *Daphnia* O. F. Muller
1. *D. magna* Straus
Genus : *Scapholeberis* Schoedler

2. *S. rammneri* Dumont & Pensaert
Genus : *Simocephalus* Schoedler
3. *S. exspinosus* Koch
Genus : *Ceriodaphnia* Dana
4. *C. reticulata* Jurine
Genus : *Moina* Baird
5. *M. rectirostris* Leydig
Family : *Chydoridae* Stebbing
Genus : *Alona* Baird
6. *Alona karua* King
Genus : *Pleuroxus* Baird
7. *P. trigonellus* O. F. Mueller
Genus : Chydorus Leach
8 . C. sphaericus O. F. Mueller

Figures (1– 8) showed the most diagnostic characters of recorded species . A total of 8 species of cladocera , 2 species , *Scapholeberis rammeneri* and *Pleuroxis trigonellus* are new records for Iraq .

1. *Daphnia magna* , Straus , 1820

Description

Female rostrum well marked and pointed (fig. 1a) . Antennae long , not strong , cylindrical, (fig. 1b) . Postabdomen with deeply sinuate posterior margin (fig. 1c) . The ephippial eggs lie at right angles to the dorsal edge of ephippium (fig. 1d) . Length female to 5.0 mm .

Male .. male with large spinulate genital papilla at base of postabdominal claw (fig. 1e,f) . Length male 2.0 mm or more .

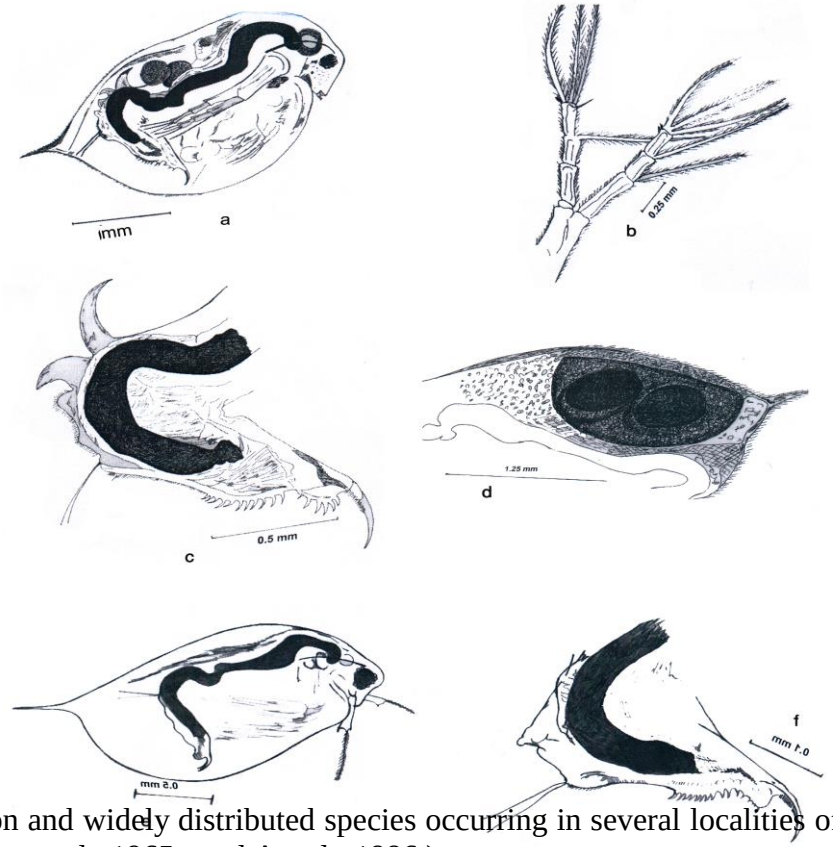


Fig. (1) *Daphnia magna* , Female .
a. Lateral view .
b. Antennae .
c. Postabdomen .
d. Ephippial eggs .
***Daphnia magna* , Male**
e. Lateral view .
f. Postabdomen .

D. magna is a common and widely distributed species occurring in several localities of Iraq (Gurney , 1921 ; Mohammed , 1965 ; and Ageal , 1986) .

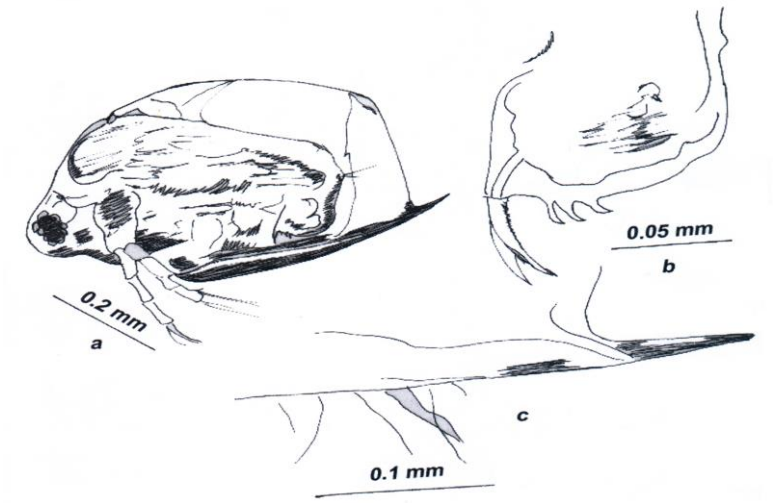
2. *Scapholeberis rammneri* Dumont & Pensaret , 1983

Description :

Female .. (fig. 2a) Longest axis 0.45 – 1.35 mm , color dark brown , head large , rostrum broadly triangular , eyes bulbously projecting above rostrum , creating abroad but shallow depression along the sides of the head , dorsally not lined by asclerotized crest .

Postabdomen .. (fig. 2b) Including end claw , and trunk limbs .Valve shape , including ventral sucker (plate 2 : 3) . Distal valve margin with a wide terminal hyaline membrane , and an internal , finely denticulated membrane with 3 – 4 hooks , and coarse spinules dorsal to the upper hook (fig. 2c).

Fig . (2) *Scapholeberis rammneri* , Female .
a. Lateral view .
b. Postabdomen
c. ventro – Posterior corner of valves .



Dumont & Perisaert (1983) raised Scapholeberis daphinids group to the rank of subfamily "Scapholebrinae" which composed of two genera scapholebris and megafenstra, separated by a series of characters , in addition , a new species *S. rammneri* was described

The wide terminal hyaline membrane and the absence of spines on the valves will differentiate *S. rammneri* from all other scapholeberis with which it might co–occur Dumont & Pensaert , 1983) .

Confusion with *S. mucronata* and *S. kingi* and unreliable published figures prevent a more precise definition of its range .

3. *Simocephalus exspinosus* Koach , 1841

Description :

Body large and heavy ; shell thick. Head and rostrum small . Valves large , somewhat quadrate . No posterior spine on valves (fig. 3a) . Postabdomen slightly narrower toward apex (fig. 3b) .

Claw with pectin of 8 to 12 teeth at its base and with row of fine teeth distal to the pectin (fig. 3c) . First trunk limb without flagellum and with small hook (fig. 3d) . Length , female to 3.0 mm ; male to 1.3 mm.

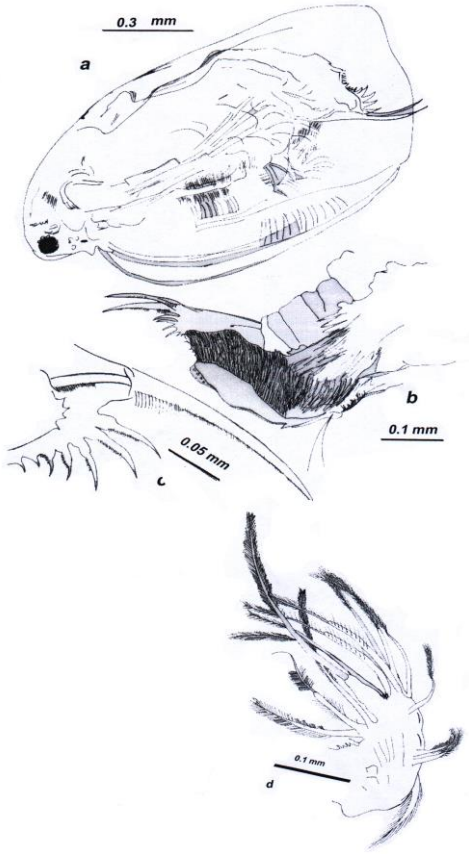


Fig. (3) : *Simocephalus exsoinosus* , Female .
a. Lateral view .
b. Postabdomen
c. Detail of claw .
d. 1st trunk limb.

This is a common and widely distributed species occurring in several localities of Iraq . Its presence has been observed in the moat of Forat at Amara by Gurney (1921) , was found by Mohammad (1965) in a small pond near shatt Al – Arab at Qurna .

Mohammad (1986) , collected this species in the Euphrates lies just west Falluja city .

4. *Ceriodaphnia reticulate* Jurine , 1820

Description :

Head rounded or obtusely angulated in front of antennules. Valves reticulated , ending in spine or angle . Antennules small with sense – hair near apex (fig. 4a) . Postabdomen with 7 to 10 anal spines (fig. 4b) Claw with pectin of 6 to 10 teeth and denticulate (fig. 4c).

Color variable shades of red and yellow . Length , female 0.6 – 1.4 mm ; male 0.4 – 0.8 mm .

Fig . (4) :
***Ceriodaphnia reticulate* , Female**
a. Lateral view . b. Postabdomen .
c. Detail of claw .

The total numbers of this species was collected from station 3 . The species has been recorded from almost the whole world . In Iraq , this species recorded by Gurney (1921) in Amara , Mohammad (1965) has been taken from vegetations at margin of shatt Al–Arab . Mohammad (1986) , also collected this species from all areas investigated in Baghdad .

5. *Moina rectrostris* Leydig , 1860 .

Description

Female **..** head extended or little depressed , deep cervical and supraocular depression , no rostrum (Fig. 5a) . Antennae long , spindle shaped , freely movable , lateral sense - hair about middle (Fig. 5b) .

Postabdomen with long projection and 10 to 15 postanal spines and bident (Fig. 5c,d) .

Male , first leg with hook (Fig. 5g) but female , first leg without hook (Fig. 5h) .

Summer eggs numerous , ephippium oval , with 1 or 2 egg (Fig. 5i) . Length , female 1.0 – 2.0 mm , male 0.4 – 0.6 to 1.0 mm .

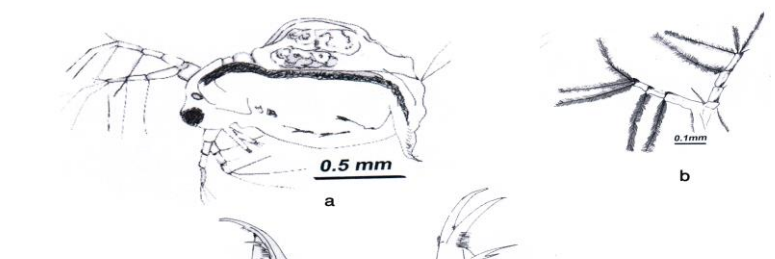


Fig. (5) *Mona rectrostris* , female and male.
a. female lateral view
b. female, antennae
c , d. Postabdomen

This species was collected for the first time in Iraq at 1921 in flood pools at Amara by Gurney . Mohammad , (1986) collected *M. rectrostris* on the Euphrates lies just west of Falluja city .

6. *Alona karua* , King , 1853 .

Description :

General form sub quadrate , compressed , valves with oblique striae (fig. 6a,b) . Postabdomen broad , expanded behind anus ; apex rounded , with usually 8 minute margin denticls and as many larger later fasciles (fig. 6c) .

Claw with 1 small basal spine . Color yellow , transparent . Length , female 0.45 mm , male 0.23 mm .

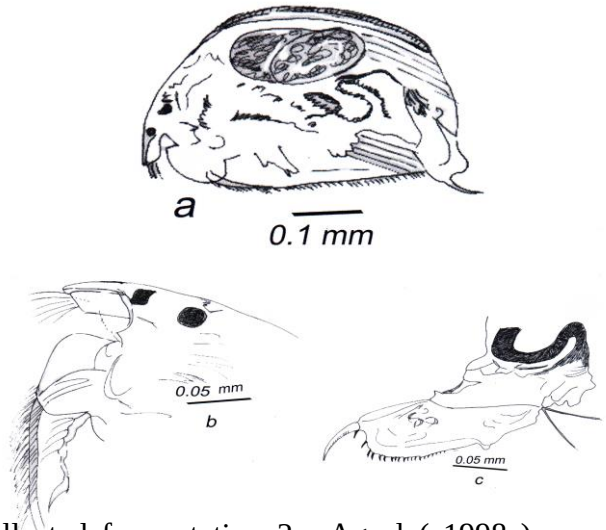


Fig. (6) . *Alona karua* , female
a. Lateral view , b. Head
c. Postabdomen .

Small numbers of this species were collected from station 2 . Ageal (1998) was recorded this species for the first time in the shatt Al – Arab near Basrah .

7. *Pleuroxus trigonellus* , O. F. Müller , 1785 .

Description :

Rostrum long and pointed (fig. 7a) . series of marginal denticles longer than anal emargination (fig. 7b) . Inferoposteal angle with 2 or 3 small teeth , often minute , sometimes wanting (fig. 7c) .

Postabdomen broadent in middle of postanal part with crescentic dorsal margin . Broader behind anus ; apex rounded ; 14 to 16 marginal denticles , longer toward apex . No spines , greatly narrowed toward apex ; forming a slender prolongation . (fig. 7d) . Color yellowish , transparent . Length , female 0.6 mm , male 0.4 mm .

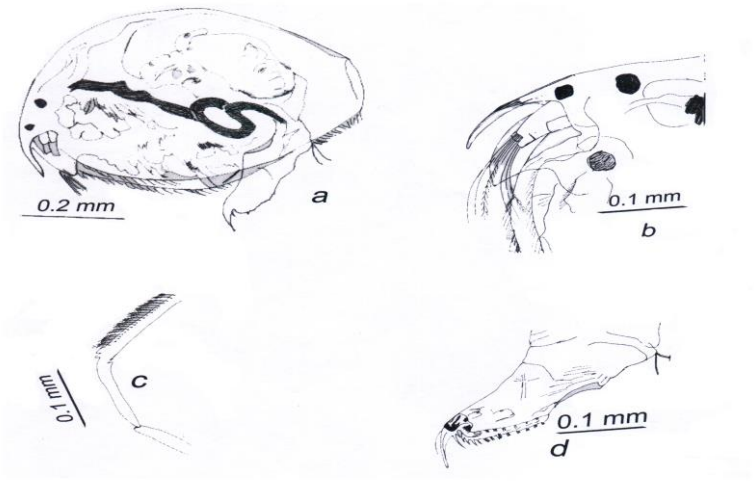


Fig . (7) *Pleuroxus trigonellus* , female .
a. Lateral view ,
b. Head ,
c . Inferoposteal angle of valve ,
d. Postabdomen .

This species is new records for Iraq . *P. trigonellus* , found in ponds , slowly flowing waters , and small lakes exclusively in station 2 , and only parthenogenetic females were present in the materials .

Although , this species is not common , widely distributed in U.S.A. & Canada (Brooks , 1959) .

***Chydorus sphaericus* , O. F. Müller , 1785 . 8**

Description :

Spherical or broadly elliptical . Shell usually reticulate sometimes smooth (fig. 8a) fornices gradually narrowing into rostrum (fig. 8b) . Postabdomen with 8 to 9 marginal denticles (fig. 8c) . Claws small , proximal basal spine very minute . Color , light yellow to dark brown . Length , femal 0.3 – 0.5 mm , mal , 0.2 mm .

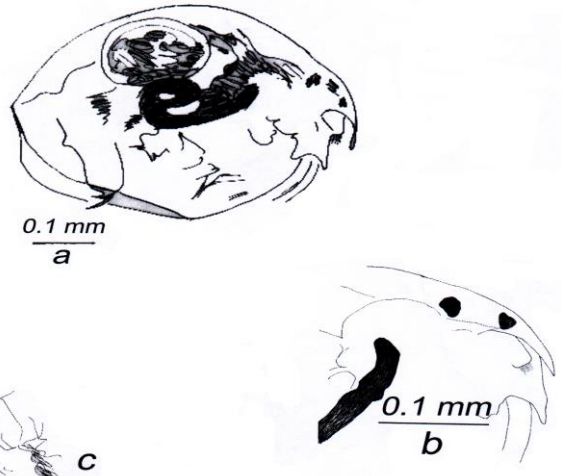


Fig.(8) *Chydorus sphaericus* , female ,
a. Lateral view , b. Head ,
c. Postabdomen .

This species is widely distributed in the world , numerous records are available from Iraq , including (Mohammad, 1965) in a canal near Wasilia , Kalaf and Samirnov (1976), Al– Saboonchi, *et al* (1986) in the Garma marshes , records from the Euphrates and Tigris

near Baghdad by Mohammad (1986), and Ageel (1998), records this species in the shatt Al–Arab near Basrah .

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تسجيل أنواع من متفرعة اللوامس (القشريات) في المياه العذبة لمحافظة النجف , العراق

الخلاصة

تم تشخيص ثمانية أنواع من متفرعة اللوامس من بعض المستنقعات وقنوات البزل في محافظة النجف . سجل نوعين هما *Pleuroxis trigonellus* و *Scapholeberis rammneri* لأول مرة في العراق .