

DISTINCTION BETWEEN TWO SPECIES OF THE GENUS *EXOCHOMUS* REDTENB. (COLEOPTERA : COCCINELLIDAE) IN IRAQ

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ABSTRACT

The present paper attempts to establish a distinction between *Exochomus negripennis* (Er.) and *E. quadripustulatus* L., depending on the characters of femoral line, male genitalia and spermatheca.

INTRODUCTION

The genus *Exochomus* Redtenb. belongs to tribe Chilocorini subfamily Chilocorinae family Coccinellidae (Furch, 1979).

The species of this genus are predaceous beetles feeding on small bodied insects, including especially aphids, scale insects and mealybug; because of their predatory habits, they are considered highly beneficial. The species *E. negripennis* and *E. quadripustulatus* are predators of the aphids *Theanax suberis* Delgo. (Stary and Kaddou, 1975). *E. flavipes* (Thunb.) is a predator of the aphids *Rhopalosiphum madis* Fitch and *Aphis faba* Theobald in Pakistan (Irshad, 2001). *E. flavipes* is a predator of *Dactylopius confusus* Ckll. (Homoptera : Dactylopidae) and *Ferrisia virgata* (Ckll.) (Homoptera : Pseudococcidae), and the species *E. lituratus* Gorb. is predator of *Adelges joshii* S.O. and S. (Homoptera : Adelgidae) and *Dioryctria abetella* Schiff (Lepidoptera : Pyralididae) in Pakistan (Irshad 2001). *E. nigromaculatus* (Goeze) is a predator of the aphid *Hylopterus pruni* (Goeffroy) in eastern Turkey (Atlihan and Ozgokce, 2002).

The species *E. negripennis* is recorded for Iraq by (Khalf, 1963) and the species *E. quadripustulatus* are recorded for Iraq by (Roberts, 1972) and for the aim of distinction between these two species this work has been done.

MATERIAL AND METHODS

Twenty male of *E. negripennis* were collected by the asperator and killed by freezing. Four male of *E. quadripustulatus* were borrowed from Entomology Department-Iraq Natural History Museum, Baghdad. The morphological characters of the two species were checked by dissecting and some parts of the specimens which show morphological differences between the two species like femoral line, male genitalia, apex of siphon, spermatheca were drawn applying cameralucida. The work was based on illustrated keys by (Pope, 1963) and (Bielawski, 1984).

RESULTS AND DISCUSSION

Exochomus negripennis (Er.)

Shape almost circular and convex (fig.1). Head reddish-brown in some specimens; labrum, clypeus and frons dark-brown; pronotum reddish-brown; elytra dark-brown except humeral angles, external borders and apex reddish-brown. Legs brownish, under side body reddish-brown except first and second exposed abdominal sternite dark.

Distinction between Two Species

Femoral line almost makes half-circle reaching to three-fourths of the length of sternite and ends in anterior border (fig.2).

Male genitalia (fig.3). Penis has a wide base and narrowed toward apex which appears acute, its length reaching to half of paramer. Paramer has a short deep narrowness at the point of the reaching with the basal piece, then beginning to be wide toward apex, which appears circular and wide. Apex of siphon as in (fig.4).

Spermatheca (fig.5). With anterior nodule makes obtuse angle with posterior cornu which appears slightly widened.

The specimens of these species have been collected from Jadiriah-Baghdad in 1985, Kut in 1986, 2005 and Baquba in 2001, which feed on Aphid Insects.

Exochomus quadripustulatus L.

Shape almost circular and evenly convex (fig.6). Head black except labrum; clypeus and frons reddish-brown; its pronotum black except anterior border, angles and lateral sides reddish-brown; scutellum black; elytra black except the base border, external and internal borders of elytron dark-brown, with two reddish-brown spots on each, anterior spot surrounds humeral tubercle, its size varies in some specimens, posterior spot usually slightly widened transversely. Legs black except tarsi brownish. Underside of body black except the external border of 1-4 sternites and all ultimate abdominal sternites reddish-brown.

Femoral line almost make half circle reaching three-fourths length of sternite, with two notches in its posterior half, and ends in anterior border of sternite (fig.7).

Male genitalia (fig.8). Penis with a wide base and narrowed toward apex and slightly notched before apex, which curved and narrowed, its length reaching beyond three-fourths length of paramer; paramer narrow reaching to half of its length, then beginning slightly widened toward apex which appears slightly circular. Apex of siphon as in (fig.9).

Spermatheca (fig.10). With anterior nodule makes acute angle with posterior cornu which appear strongly widened.

The specimens of this species have been collected from Shaqlawa (Arbil) 1985 feed on aphid.

Comparative notes: it differs from *E. negripennis* (Er.) in the following characters; colour of body is black and reddish-brown in *E. negripennis*, femoral line with two notches in its posterior half and there is no notches in the femoral line of *E. negripennis*, penis length reaching beyond three-fourths length of paramere and reaching to half of paramere in *E. negripennis*, spermatheca with anterior nodule makes acute angle with, posterior cornu which appear strongly widened and with anterior nodule makes obtuse angle with posterior cornu which appear slightly widened in *E. negripennis*.

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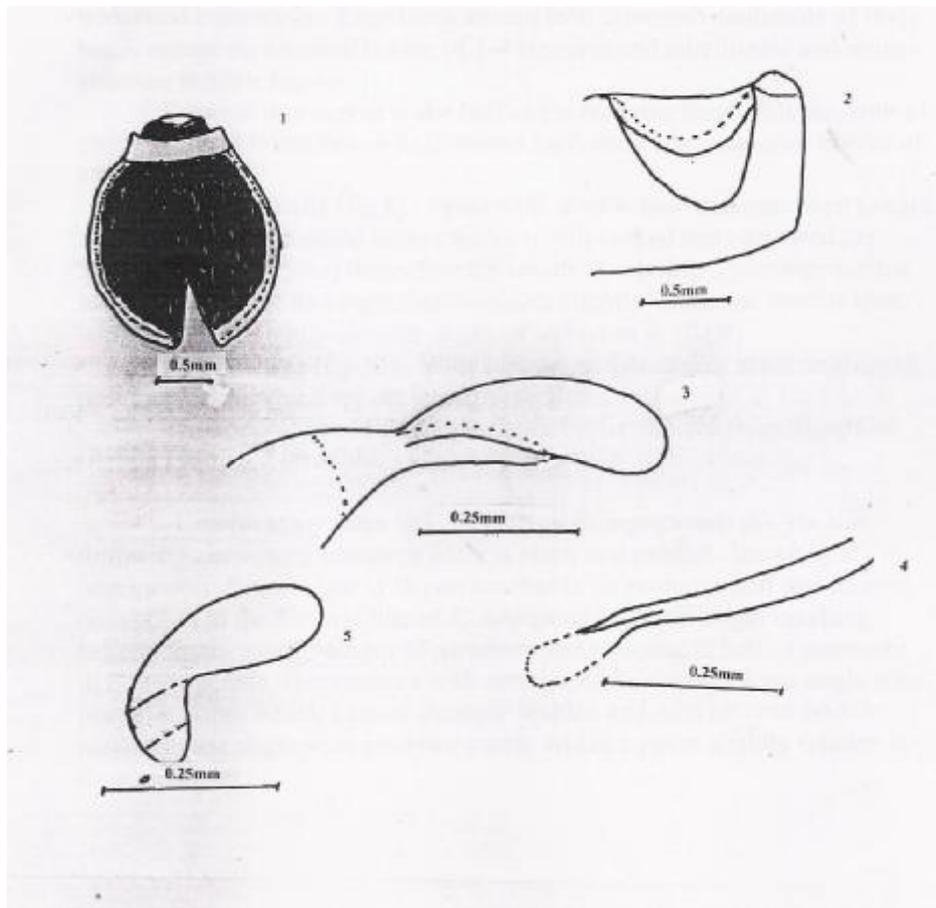
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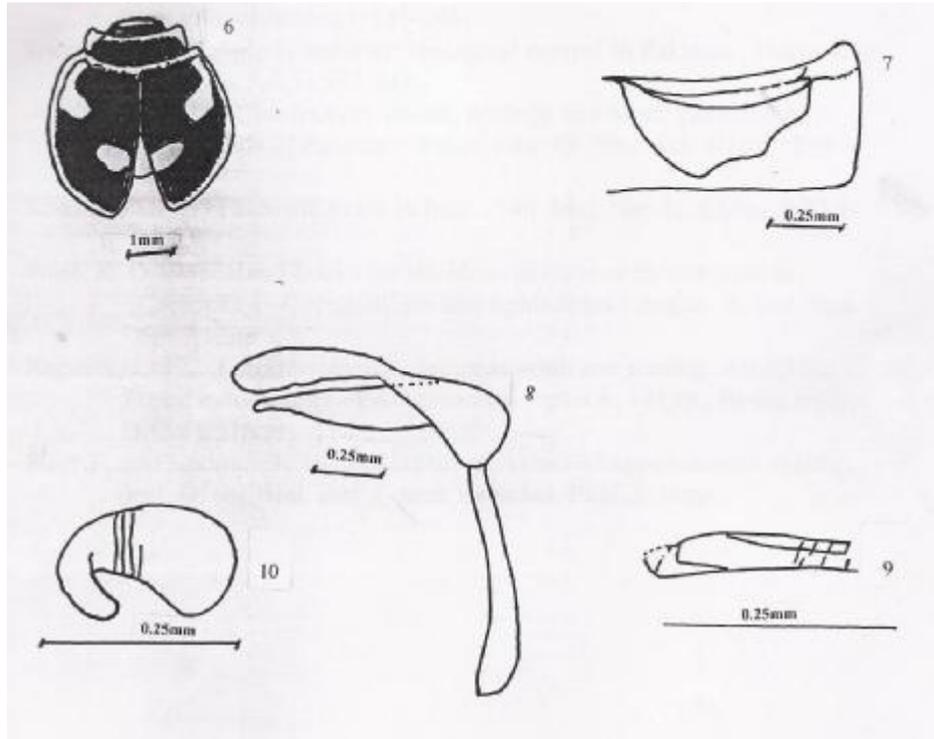
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Distinction between Two Species



Figs.1-5: *Exochomus negripennis* (Er.).

1. outline and pattern of body.
2. femoral line.
3. male genitalia.
4. siphon.
5. spermatheca.



Figs.6-10: *Exochomus quadripustulatus* L.

- 6. outline and pattern of Body.
- 7. femoral line.
- 8. male genitalia.
- 9. Siphon.
- 10. spermatheca .

Distinction between Two Species

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سجلين من نين بزميتا ا
Exochomus Redtnb (Coleoptera : Coccinellidae)
قربلائي

ل يوسسابا عي لهم
موقع اتيك - طساو عا جا

تصلا لئا

ع نالين؛ انز يفتل ارضة تي *Exochomus negripennis* (Er) ع نلا او *Exochomus*
quadripustulatus L. لمة المدقو التمييز على دراسة المظهر الخارجي، الخط الفخذي
،السوءة الذكرية والمستودع المنوي .