

Taxonomical Revision on Certain Species of Subfamily Chilocorinae (Coleoptera: Coccinellidae) in Egypt

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Abstract: This is the first paper of series reviewing the Egyptian Chilocorinae. Two genera *Chilocorus* Leach and *Parexochomus* Barovsky belonging to Chilocorinae are revised depending on specimens preserved in four collections ALFC, ASUC, CUC and MAC and fresh materials collected from governorates during study years as well as five species of *Parexochomus nigripennis*, *pubescens*, ssp. *gestroi*, *nigromaculatus* and *troberti* are transferred from *Exochomus* to *Parexochomus*. Keys are provided to separate these genera and species, description based on adults, detailed information about distribution and some ecological notes are mentioned.

Key words: Coccinellidae • Chilocorinae • Palaearctic • Survey and Taxonomy

INTRODUCTION

The subfamily Chilocorinae, Coccinellidae, Cucujoidea, comprise the predators of injurious pests such as mealy bugs and scale insects and other homopterans insects [1-4]. In Egypt this subfamily includes approximately 6 species in one tribe Chilcorini in two genera *Chilocorus* and *Parexochomus*. This subfamily was investigated by many authors [5-12] and the list of the Egyptian Coccinellidae including the *Scymnus* species was published [13]. Alfieri [14], in his Monograph "Coleoptera of Egypt" listed from the tribe Chilcorini, 5 species and one subspecies. The taxonomic status of the subfamily Chilocorinae was discussed [1, 15-21]. The objectives of the present work is investigate the chilcorid fauna through the following steps: Examination of the main Egyptian insect collections for specimens of Chilocorinae, field collections of species from localities, which almost covered major geographical zone of Egypt. Full description with drawings for all species, construction of keys to genera and species attributed to each one. Recording the local and world distribution for each species especially in the Palaearctic region are mentioned.

MATERIALS AND METHODS

The present taxonomic study was based on an examination of the preserved specimens in the Egyptian Reference Insect Collections. These collections are:

Collection of Alfieri, Department of Plant Protection, Faculty of Agriculture, Al-Azhar University (ALFC); Collection of Ain Shams University, Faculty of Science, Department of Entomology (ASUC); Collection of Cairo University, Faculty of Science, Department of Entomology (CUC) and Collection of the Plant Protection Research Institute, Ministry of Agriculture (MAC).

The fresh materials were collected by using sweeping net and hand picking during three years (2013-2015). The specimens which were collected are identified and comprised, with the specimens in the Reference Insect Collections.

The measurements were made [1, 19, 22], for three specimens of each species using an ocular micrometer attached to a dissecting microscope as follows: total length, from apical margin of clypeus to apex of elytra (TL); pronotal length, from the middle of anterior margin to margin of basal foramen (PL); pronotal width at widest part (PW); elytral length along suture, including scutellum (EL) and elytral width across both elytra at widest part (EW).

Entire beetles boiled in 10% solution of KOH and rinsed with distilled water, then transferred to glycerol and examined on slides [1, 2, 19, 22]. The genitalia were illustrated from slide preparations by using a camera lucida attached to SZ61 stereomicroscope. Diagnostic characters and keys are provided based on the external morphological characters of adults, male genitalia and spermatheca of female genitalia [1, 19, 22-24], in some species.

RESULTS AND DISCUSSION

Subfamily Chilocorinae, Sasaji

Chilocorinae Sasaji, 1968: 20.

Diagnosis: Clypeus expanded laterally. Antenna reduced, 10-segments or less. Apical segment of maxillary palpus cylindrical with truncate apex; maxillary cardo expanded or strongly sclerotized. Pronotum strongly descending laterally, deeply concave on anterior margin. Base of elytron distinctly broader than base of pronotum. Metasternum impressed for reception of middle femora. Tibia often angulate externally.

Tribe Chilacorini, Costa

Chilacorini Costa, 1849: 9.

Diagnosis: Body length from 2.0 to 8.0 mm; form oval to nearly circular; dorsal surface glabrous or pubescent. Antenna short, terminal segments forming fusiform club, base concealed beneath genal extension of clypeus which is shelf-like and partially divides eye. Prosternal process without carinae. Abdomen usually with 6 visible sterna in male, 5 in female, sometimes 5 in both sexes, or 6 in both sexes. Tibia simple or angulate externally, with or without apical spurs. Tarsus 4-segments; claw simple, or swollen at base, or with basal tooth. Male genitalia symmetrical or asymmetrical. Female genitalia with long sperm duct, infundibulum present or absent.

This tribe is represented in the Egyptian fauna by six species belonging to two genera, *Chilocorus* and *Parexochomus*, as follows:

Key to genera of Chilacorini

- 1 Antenna 8-segments (Fig. 1a); postcoxal line on the first abdominal sternum merging with the posterior margin of the same sternum (Fig. 1b)
.....*Chilocorus* Leach
- Antenna 10-segments (Fig. 1c); postcoxal line on the first abdominal sternum complete (Fig. 1d)
.....*parexochomus* Barovsky.

Genus Chilocorus Leach, 1815

Chilocorus Leach, 1815: 116; Type species; *Coccinella cacti* Linnaeus, 1758.

Diagnosis: Body rounded, strongly convex, dorsal surface glabrous. Antenna 8-segmented, club 4-segmented, fusiform. Apical segment of maxillary palpus with lateral margins nearly parallel, apical margin strongly

oblique (Fig. 2a). Prosternal lobe flat, without carinae (Fig. 2b). Elytral margin not reflexed, finely beaded; epipleuron descending externally, shallowly foveolate for reception of femoral apices. Abdomen with small sixth visible sterna in male, 5 in female. Postcoxal line incomplete merging with posterior margin of abdominal sternum (Fig. 2c). Leg with stout femora; tibia with external, triangular tooth at basal third; tarsal claw with small, quadrate tooth at base. Male genitalia with basal lobe slightly asymmetrical; trapes slender, longer than phallobase; siphon stout, twisted near apex. Female genitalia with spermathecal capsule large, without differentiation into nodulus and ramus, cornu short, bent with falciform appendix at apex; infundibulum absent.

Chilocorus bipustulatus (Linnaeus, 1758) (Fig. 3)

Synonym: *Coccinella bipustulata* Linnaeus 1758: 367.

Description: Length 3-4.5 mm. T. L. 4.5 mm.; P. L. 1 mm.; P. W. 2 mm.; E. L. 3.25 mm.; E. W. 3 mm.; B. H. 1.5 mm.; H. W. 1.25 mm. Body broadly oval, tapered posteriorly, moderately convex; reddish brown dorsally; polished, glabrous, finely punctured at dorsal surface.

Head: reddish brown, finely punctured, deeply inserted into the prothorax, posterior margin covered by pronotum, anterior margin of clypeus emarginate, elevated at its middle and depressed on both sides; clypeus expanded laterally covered antennal insertions and subdividing the eyes; eyes finely faceted, distinctly emarginated; antenna 8-segmented, club-shaped, scape symmetrical, terminal antennomere distinctly longer than penultimate antennomere 7, tapered apically; labrum brown, hairy, anterior margin truncate, lateral margins arched; mandibles with two teeth only, apical and basal teeth; galea and lacinia of maxilla bears long hairs, terminal maxillary palpus oblong, apical margin obliquely truncate, length two times as width from outer margin; mentum subtrapezoidal broadly joined with the submentum, terminal labial palpomere pointed apically.

Thorax: pronotum reddish brown, evenly convex at the middle, finely punctured, pubescent toward the sides, anterior margin partially conceals the posterior margin of the head, antero-lateral margins and apical third of the base with double marginal ridges, outer angles rounded, pronotal base slightly shorter than elytral base; prosternum black, prosternal process narrow without carinae; meso and metasternum black. Elytra reddish brown, polished with three yellow spots per each elytron forming a transversal band at its anterior half, the two

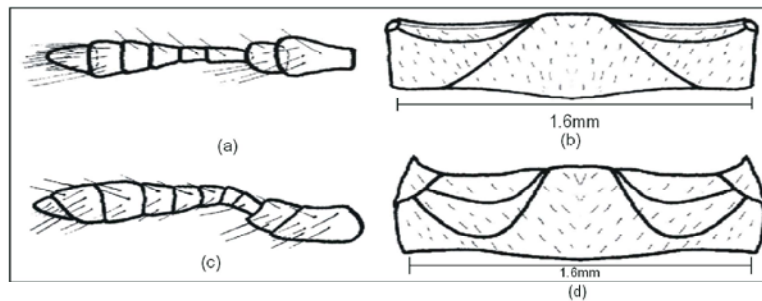


Fig. 1: (a and c) antenna of *Chilocorus* and *Parexochomus* respectively; (b and d) first abdominal sternum with postcoxal line of *Chilocorus* and *Parexochomus* respectively also

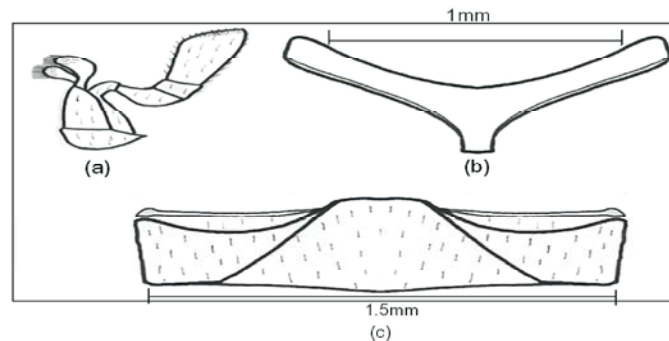


Fig. 2: *Chilocorus* spp., (a) maxilla; (b) prosternum; (c) postcoxal line

inner spots towards the elytral suture are united, external spot nearly separated, lateral margins of elytra strongly depressed forming obvious ridge not reach the elytral apex, elytral epipleura broad strongly concave, elytral apex slightly tapered. Scutellum triangular black. Legs brown, tibiae flattened and angulated externally without apical spurs, tarsi cryptotetramerous, tarsal claws with subquadrate basal tooth.

Abdomen: Six visible abdominal sternites in male, the sixth abdominal sternum small, while five abdominal sternites in the female, the sixth abdominal sternum invisible, venter light brown to black; abdominal postcoxal line on the first abdominal sternum runs parallel the posterior margin of the same sternum, sometimes overlaps on the second ventral sternite; posterior margin of the sixth sternite in the male strongly truncate.

Male genitalia: Apodeme of male sternum 9, sclerotized and angulated at apex; tegmen with basal lobe and trabes asymmetrical, basal piece (bp) small, longer than width, basal lobe (bl), slightly longer than parameres, broader at the middle, pointed apically; parameres (pa) finger like, recurved toward basal lobe, bears at apical half numerous short setae; siphon sclerotized, tube like, siphonal apex capsule distinctly T-shaped, siphonal apex slightly tapered.

Female genitalia: coxites elongated, cone-like apically, slightly chitinized, bears at its apex numerous long and short setae, without distinct stylus; spermatheca, globular nearly, C-letter, distinctly chitinized, with indistinct nodulus (n) and ramus (r) or slightly visible, cornu (c) strongly clubbed with distinct depression at outer edge, cone-shaped and pointed apically.

Specimens examined: Wadi Karam Alam (680m.) South Sinai 10-12.IV.1940 (1) and Marg 15.VII.1909 (1)..(ALFC) Abu Rawash 4.I.1950 (2).....(ASUC) Kom Hamada 10.XII.1917 (1); Tukah 2.XI.1920 (1); Wadi El-Lega (South Sinai) 20. IV.1939 (1) (CUC) Cairo 9.II.1913 (5); Kom Hamada 10.XII.1917 (3); Dokki 25.X. 1920 (6); Tukah 2.XI.1920 (4); Zagazig 18.I.1924 (3) (MAC) Kafr El-Dawar (El-Bagor) 18.III.2016 (7) Author Coll.

Local distribution: Cairo, Giza, Qalubia, Minufiya, Sharqiya, Beheira and South Sinai.

World distribution: North Africa included Egypt, Europe, Asia, NAR and AFR.

Genus *Parexochomus* Barovsky, 1922

Parexochomus Barovsky [25], 1922: 292: Type species: *Exochomus pubescens* Küster, 1848: 94.

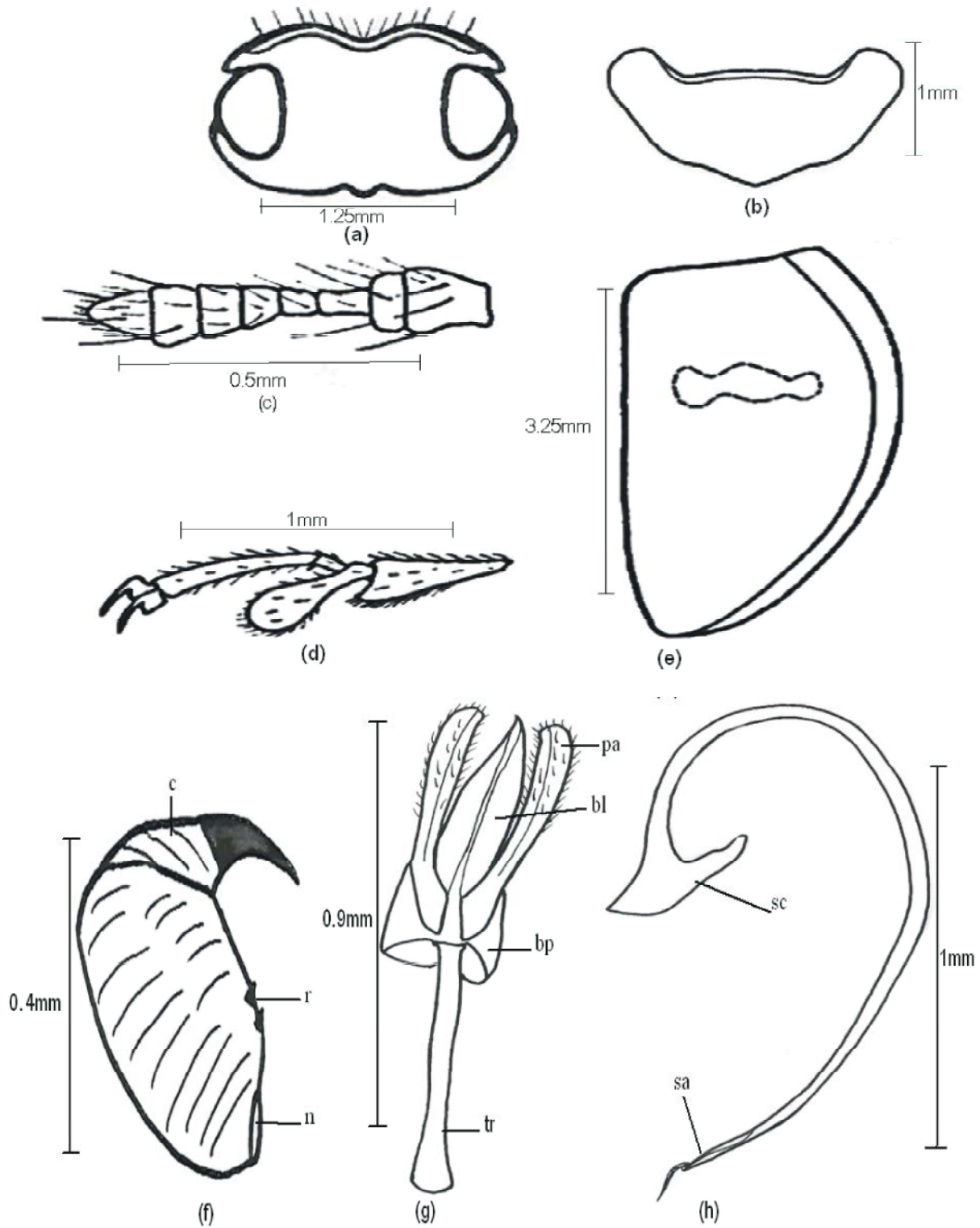


Fig. 3: *Chilocorus bipustulatus* (Linnaeus), (a) head; (b) pronotum; (c) antenna; (d) tarsus; (e) right elytron; (f) spermatheca; (g) tegmen; (h) siphon; (n) nodulus; (r) ramus; (c) cornu; (pa) paramera; (bl) basal lobe; (bp) basal base; (tr) trabes; (sc) siphonal capsule and (sa) siphonal apex

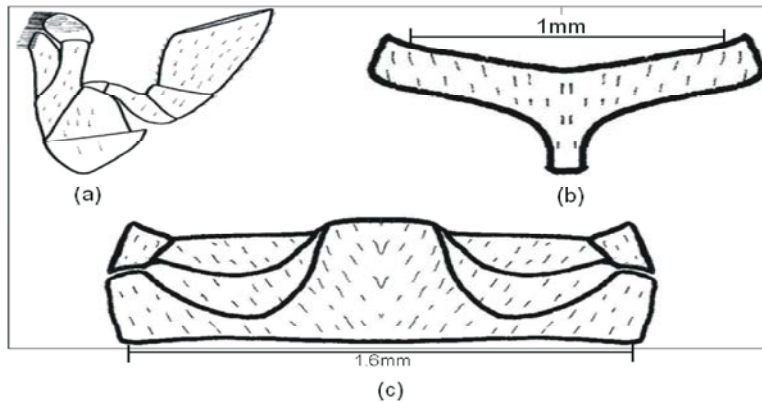


Fig. 4: *Parexochomus* ssp., (a) maxilla; (b) prosternum; (c) postcoxal line

Diagnosis: Body broadly oval to almost round; upper surface glabrous or pubescent. Antenna 10-segmented; last 3 segments forming a slender fusiform club, 10th segment embedded in 9th. Mandible heavy, angulate at middle of outer face; terminal segment of maxillary palpus subsecuriform, apex strongly oblique (Fig. 4a). Prosternal lobe narrow, truncate at apex (Fig. 4b), anterior coxae almost contiguous. Pronotum finely margined across base, lateral margin slightly reflexed. Elytral margin strongly beaded, epipleuron not foveolate for reception of femoral apices. Abdomen with 6 visible sternites in male, five in female; abdominal postcoxal line complete or virtually so (Fig. 4c). Leg with moderately stout femora, tibia slender, tarsal claws strong, with subquadrate basal tooth on each. Male genitalia with basal lobe asymmetrical. Female genitalia with long sperm duct; infundibulum present.

- Head black in female, reddish yellow in the male; pronotum reddish yellow with triangular marking at the middle, extended from the base to anterior margin.....
-ssp. *gestroi* Fairmaire
- 4 Elytra entirely black; body glabrous, from 4-4.5 mm. in length..... *nigripennis* Erichson
- Elytra black with a wide reddish yellow spots at apex; body pubescent, from 3-3.5mm. in length
- *pubescens* Küster

Parexochomus nigripennis (Erichson, 1843) (Fig. 5)

Synonyms: *Exochomus nigripennis* Erichson, 9(1843): 267; *Exochomus xanthoderus* Fairmaire, 3(1863): 648; *Exochomus nigromaculatus* var. *nigripennis* Erichson; *Exochomus flavipes* ab. *Nigripennis* Erichson, 9(1843): 267.

Description: Length 4 to 4.5 mm. T. L. 4 mm.; P. L. 0.6 mm.; P. W. 2 mm.; E. L. 3.2 mm.; E. W. 3 mm.; H. W. 1 mm. Body nearly rounded, convex, glabrous; pronotum entirely reddish yellow; elytra black with a faint metallic reflection; legs reddish yellow, claws with subquadrate basal tooth. **Head:** transverse, subquadrate, reddish yellow, clypeus flat anteriorly bears numerous setae, without marginal ridge, anterior margin nearly straight without projections, epistoma dilated, concealing the base of antennal insertions and subdividing the compound eyes; eye finely faceted, distinctly emarginated; antennal insertion not exposed, hidden by expanded clypeal area; antenna yellowish, 10-segmented, the first segment symmetrical, slightly curved, second barrel-shaped as long as wide and the same diameter as first, third obconical, fourth, fifth and sixth antennomeres nearly equal, seventh, eighth, ninth and tenth antennomeres forming a slender fusiform club, terminal antennomere small conical, deeply embedded in

Key to species and subspecies of genus Parexochomus

- 1 Head black; dorsal surface glabrous 2
- Head reddish yellow in both sexes or not; dorsal surface glabrous or pubescent
- 3
- 2 Pronotum black with broad sides reddish yellow, with distinctly pubescent
- *nigromaculatus* Goeze
- Pronotum orange or yellowish brown, the sides without distinctly pubescent
- *troberti* Mulsant
- 3 Head reddish yellow in both sexes; pronotum reddish yellow
- 4

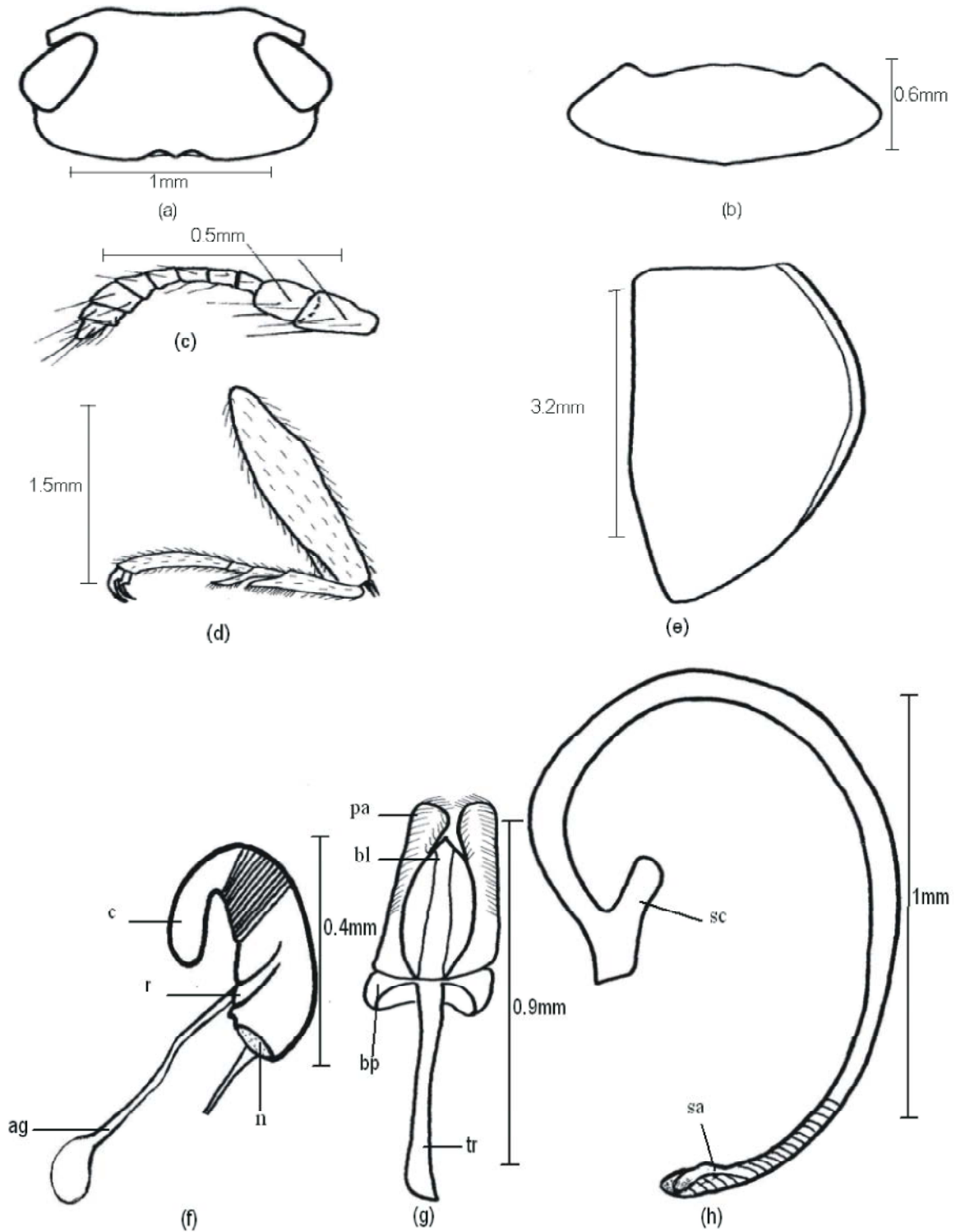


Fig. 5: *Parexochomus nigripennis* (Erichson), (a) head; (b) pronotum; (c) antenna; (d) middle and hind legs with tarsus; (e) right elytron; (f) spermatheca with accessory gland; (g) tegmen; (h) siphon; (n) nodulus; (r) ramus; (c) cornu; (ag) accessory gland; (pa) paramera; (bl) basal lobe; (bp) basal base; (tr) trabes; (sc) siphonal capsule and (sa) siphonal apex

penultimate antennomere, bears number of bristles at its anterior margin; labrum with anterior margin truncate, lateral margins oblique, base wider than anterior margin, setose; mandible bidentate, apical and basal teeth; terminal maxillary palpomere subsecuriform, strongly oblique apically, galea and lacinia bears at its anterior and inner margins numerous compact long hairs; mentum broadly joined with the submentum, terminal segment of labial palp cylindrical.

Thorax: Pronotum entirely reddish yellow, glabrous, finely punctured, evenly convex, covered the posterior margin of the head, posterior margin semicircular and rounded, posterior margin wider than anterior one, pronotal width longer than two times as long as pronotal length; prosternum reddish yellow, prosternal process very narrow, without carinae; meso and metathorax black in the male, while reddish except the middle part and base of metathorax dark brown or black in the female; mesosternum emarginated at its middle, to receive the prosternal process. Elytra black with metallic reflection, glabrous, finely punctured, elytral base wider than pronotal base, elytral width nearly as long as elytral length, elytral margin finely reflexed, with complete marginal bead, elytral epipleura concave, epipleural fovea absent, ventral side and epipleura with yellowish short hairs. Legs reddish yellow, fore femura with grooves inhabit the foretibiae, protibiae simple, narrow, middle and hind tibiae with two apical spurs, tarsal claws with strongly basal tooth.

Abdomen: Reddish with six abdominal sternites in the male, the sixth segment small, while in the female the sixth segment invisible, retracted within the body; postcoxal line on the first abdominal sternum recurved and complete, not reach the anterior margin of the same sternite, anterior portion of the first abdominal sternum between metacoxae in the male black, the posterior margin of the sixth sternite strongly convex in the female, while in the male, slightly emarginate.

Male genitalia: Apodeme of male sternum, rod-like, not chitinized angulated apically; tegmen slightly chitinized with parameres and phallobase symmetrical, penis guide or trabes asymmetrical, basal piece (bp) short, basal lobe (bl), V-shaped with orifice extending along basal lobe, protuberances; parameres (pa) finger-like, distinctly longer than basal lobe, bears at its outer and lateral edges of apical half short and long setae; siphon tubular with distinct, T-shaped, siphonal capsule, siphonal apex not tapered.

Female genitalia: coxites elongated, cone-like apically, slightly chitinized, bears at its apex numerous setae, stylus strongly distinct, not chitinized, setose; spermatheca, globular nearly, C-letter, slightly chitinized, nodulus (n) and ramus (r) indistinct, accessory gland not chitinized, basal portion of cornu (c) broader than distal one.

Specimens examined: Road El-Suez 7.V.1922 (2); Um Barad (Sinai) 22.XI.1926 (1); Mammoura IX.1924 (1); Wadi Gendil (Sinai) IX.1926 (1); Massara 10.VIII.1911 (3); Bir Isla (South Sinai) 6-9.IV.1940 (2); Mahmacha 16.IX.1909 (1); Ezbet El-Nakhl V.1909 (4); Mazarita 13.XII.1914 (1); Edos 15.IV.1925 (1); Ain Shams 5.VIII.1911 (1); Zeitoun V.1908 (1)..... (ALFC)
Gabel Asfar 19.V.1952 (6); Marsa Matrouh VIII.1953 (5); Marsa Matrouh 10.IX.1957 (1); Dakhla Oasis 8.IV.1955 (1); Balteam 2.VIII.1945 (1); Matrouh 7.VIII.1951 (2)..... (ASUC)
Wadi El-Lega 20.IV.1939 (2); Wadi El-lega 24.IV.1940 (1); Wadi Um Elek 28.IX. 1930 (6); Wadi El-lega 7.VIII.1941 (1); Wadi Hoff 10.X.1980 (3); Abu Rawash 4.IV.1955 (1); Burg El-Dera 12-16.IX. 1955 (1); Abu Rawash 20.II.1955 (1)..... (CUC)
Ezbet El-Nakhl 21.XI.1913 (6); Damietta 18.VIII.1914 (5); Dakhla Oases 17.IV.1917 (3); Dakhla Oases 18.IX.1918 (6); Cairo 15.IX.1919 (5); Qantara (Suez) 15.IX.1924 (3); Mahalla 5.IX.1925 (6); Salloom 9.VIII.1926 (4); Marsa Matrouh 28.7.1929 (5); Abu Rawash 21. IX.1929 (9); Marg 30.III.1933 (8); Fayoum 6.V.1924 (6) and King Mariout 24.VII.1937 (6)..... (MAC)
Saint Kathriene 25-27.V.2014 (22) and Siwa Oasis 16.IX.2014 (20)....Author Coll.
Local distribution: Cairo, Giza, Qalubiya, Suez, Damietta, Matrouh, Alexandria, Gharbiya, Dakhla Oasis and South Sinai.
World distribution: Egypt, Algeria, Canary Island, Libya, Tunisia, Morocco, Italy, Portugal, Spain, Arab Emirates, Saudi Arabia and Iran.

Parexochomus pubescens (Küster, 1848) (Fig. 6)

Synonyms: *Exochomus pubescens* Küster, 13(1848): 94
Platynaspis pubescens Crotch, 1874: 196; *Platynaspis flavilabris* Mulsant, 1850: 947.

Description: Length 3.25 mm. T. L. 3.25 mm.; P. L. 0.5 mm.; P.W. 1.5mm.; E.L. 2.6 mm.; E. W. 2.6mm.; H. W. 0.87mm. Body circular, short oval to subhemispherical almost as broad as long, convex, dorsal surface pubescent.

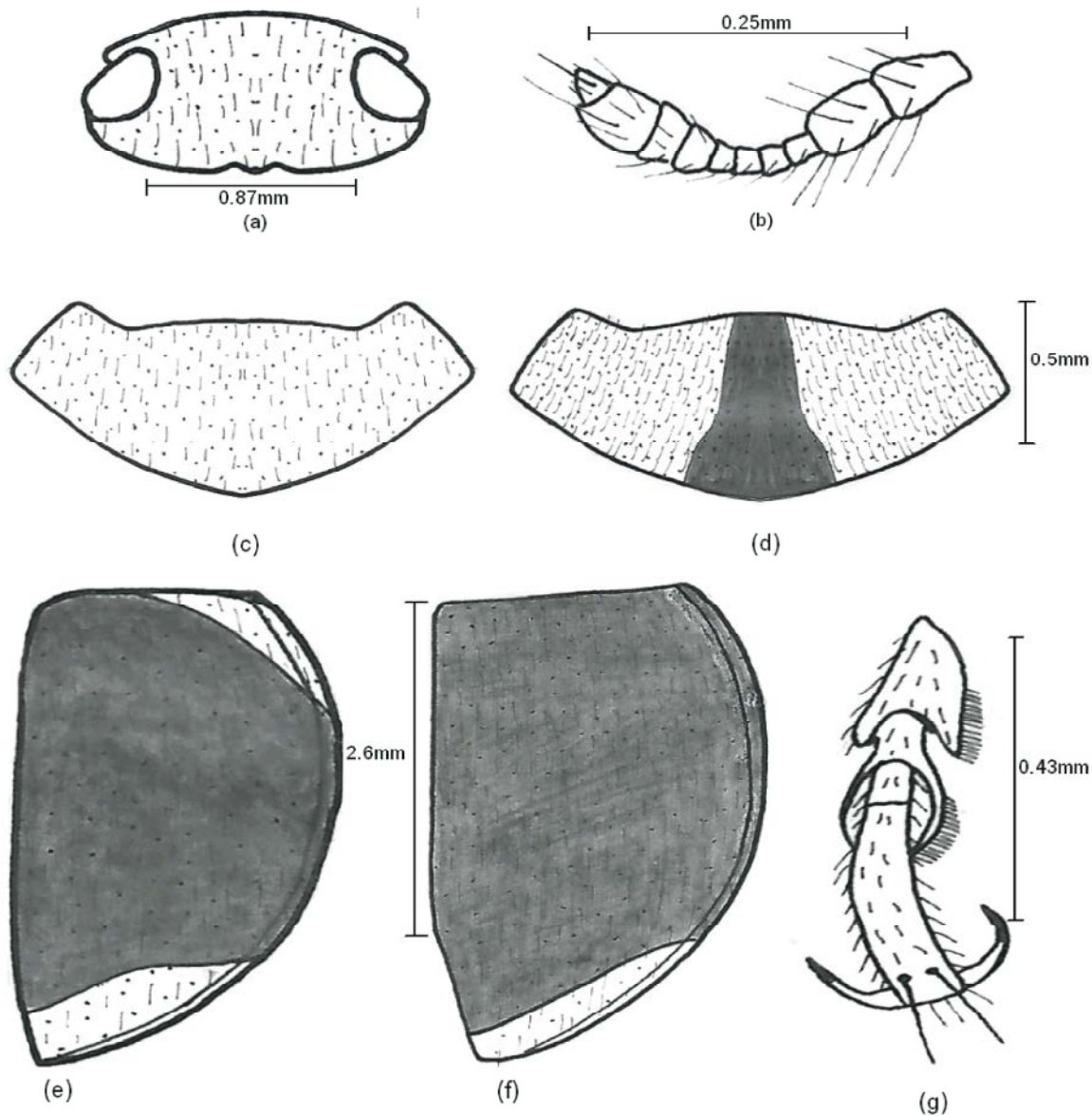


Fig. 6: *P. pubescens* (Küster) andssp. *gestroi* (Fairmaire), (a) head; (b) antenna of species and subspecies; (c) pronotum of *pubescens*; (d) pronotum of *gestroi*; (e and f) right elytron of *pubescens* *gestroi*, respectively; (g) tarsus of *pubescens* and *gestroi*

Head completely dark in female, reddish yellow in male. pronotum entirely reddish yellow or with two reddish yellow spots at sides; Elytra reddish yellow, with slightly lighter marginal border, entirely pubescent, fine relatively long and clear, lateral margin of elytra flat; terminal abdominal segment and legs reddish yellow; claws with blurred basal tooth.

Head: Reddish yellow or with black band at its posterior margin; clypeus without ridge; antennal insertion hidden by expanded clypeal area, which subdividing the

compound eyes; antenna 10-segmented, with slender fusiform club, first segment slightly curved, second barrel-shaped, as long as and same diameter as first, third obconical, fourth, fifth and sixth nearly equal, each slightly wider apically than at base, seventh, eighth, ninth and tenth forming a slender fusiform club, terminal antennomere embedded in penultimate antennomere, setose; labrum reddish yellow, covered with yellow short hairs, lateral margins nearly semicircular; mandible bidentate, with apical and subapical teeth; terminal maxillary palpomere subsecuriform, nearly parallel sided,

outer margin two times as inner margin, galea and lacinia bears numerous long hairs at its anterior margins; mentum subtrapezoidal broadly joined with the submentum, terminal segments of labial palp cylindrical twice as long as wide.

Thorax: Pronotum entirely reddish yellow or with two reddish yellow spots at sides, pubescent, often with fine margin extended to the base of elytron, leaving a triangular black mark at the middle, posterior margin rounded, longer than anterior margin, antero-lateral angles strongly descending; prosternum reddish without carinae; meso and metathorax black except the epimera of mesothorax reddish, mesosternum emarginated at the middle of anterior region, to receive the prosternal process. Scutellum triangular black, small. Elytra black, with a wide reddish yellow spots at apex, sometimes the lateral margins and external basal angles reddish yellow, lateral margins of elytra with flat ridge, elytral epipleuron reddish yellow, concave. Legs reddish yellow, middle and hind tibiae with two terminal spurs; claws with small basal tooth.

Abdomen: Six abdominal sternites in both sexes, but in the female, the sixth sternite retracted onto the fifth sternite, become invisible; postcoxal line on the first abdominal sternum recurved and incomplete, not reach the anterior margin of the same sternum; the first and second abdominal sternites black, sometimes lateral margins reddish yellow, sternites 3-6 entirely reddish yellow, posterior margin of the sixth abdominal sternite in both sexes convex.

Specimens examined: Ain Ghideirat 27.VIII.1951 (1)..... (CUC)

Local distribution: South Sinai

World distribution: Egypt, Algeria, Libya, Morocco, Tunisia, Italy, Greece, Spain, France, Saudi Arabia, Iran, Iraq, Palestine, Syria and AFR.

Parexochomus pubescens gestroi (Fairmaire, 1875) (Fig. 6)

Synonyms: *Exochomus pubescens apicatus* Fairmaire, 28(1884): 69; *Exochomus pubescens apicalis* Weise, 1885.

This subspecies is distinguished by the following characters:

Head reddish yellow with black band at its posterior margin; pronotum reddish yellow with triangular black marking at the middle, extended from the base to anterior margin; elytra black with transversal reddish yellow mark at its apex.

Specimens examined: Ramleh 5.X.1913 (1); Dekhela ?IV.? (1); Coleopatra (Ramleh) 15.VII.1924 (1) (ALFC)

Local distribution: Alexandria.

World distribution: As the previous one.

Parexochomus nigromaculatus (Goeze, 1777) (Fig. 7)

Synonyms: *Coccinella nigromaculata* Goeze, 1(1777): 24; *Exochomu sauritus* Scriba 1791.

Description: Length 4.5 mm. T. L. 4.5 mm.; P. L. 1mm.; P.W. 1.25mm.; E.L. 4 mm.; E. W. 3.75mm.; H. W. 1.25mm. Body circular to hemispherical, somewhat longer than broad, black. Head black in female, yellow to black in male. Pronotum with yellow lateral margins. Elytra with fine puncturation, sometimes with metallic reflections.

Head: Yellowish or orange in the male, while the posterior margin black in female; clypeus expanded laterally to covered the antennal insertion, mouthparts reddish yellow; terminal maxillary palpomere subsecuriform, slightly parallel sided, expanded apically; antenna 10 - segmented club- shaped, terminal antennomere embedded in penultimate antennomere.

Thorax: Pronotum black, with broad reddish yellow marks at the sides with distinctly pubescent; prosternum reddish brown; epimeron of mesothorax orange to reddish yellow in the male, black in the female; elytra black with feebly reflexed metallic blue or metallic green; legs and the terminal abdominal segment reddish brown.

Specimens examined: one specimen preserved at (CUC) without date.

World distribution: Egypt within Africa, south and central Europe and Asia.

Parexochomus troberti (Mulsant, 1850) (Fig. 8)

Synonyms: *Exochomus troberti* Mulsant 1850: 482; *Exochomus flavipes ab. troberti* Mader, 6(1955): 796.

Description: Length 3-5.5 mm. T. L. 5 mm; P. L. 1.6mm.; P.W. 2.25mm.; E.L. 4 mm.; E. W. 3.85mm.; H. W. 1.1mm. Body hemispherical, strongly convex, glabrous, black, sometimes the elytra with feebly metal gleam.

Head: black, finely punctured, anterior clypeal margin, reddish brown, recurved from the middle, strongly expanded laterally.

Thorax: Pronotum orange or yellowish brown, finely punctured, lateral margins slightly raised, with simple longitudinal stripe, usually mediate, cover half base and

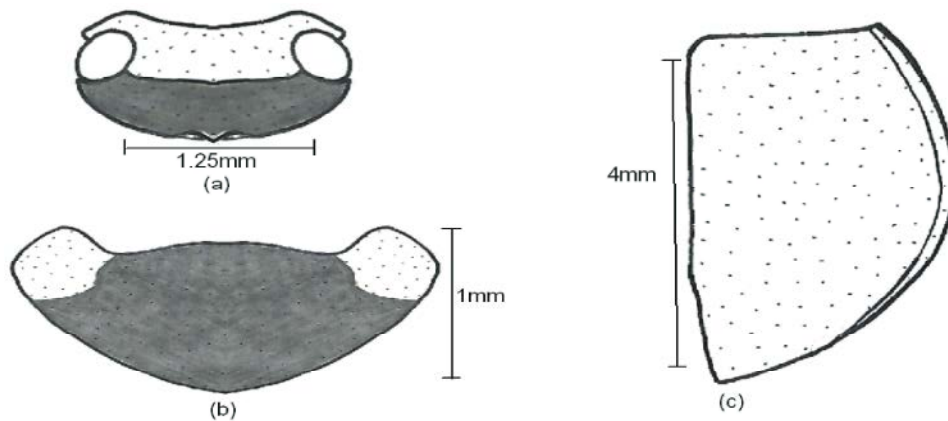


Fig. 7: *Parexochomus nigromaculatus* (Goeze), (a) head; (b) pronotum; (c) right elytron

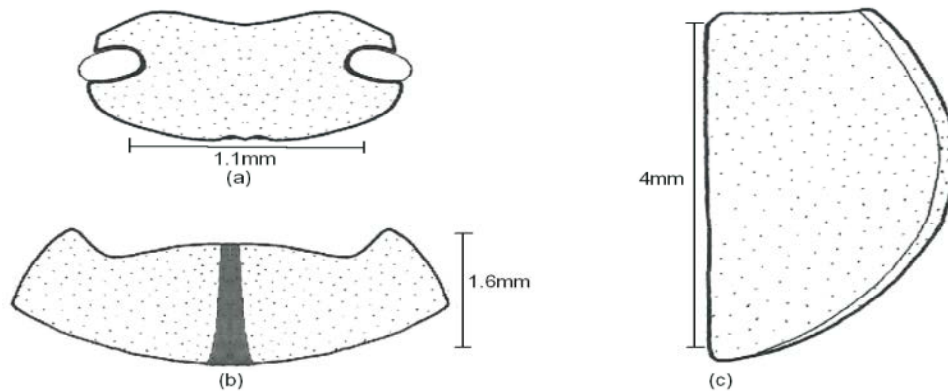


Fig. 8: *Parexochomus troberti* (Mulsant), (a) head; (b) pronotum; (c) right elytron

extended to anterior margins, antero-lateral angles slightly rounded, ventral side yellow or yellowish red; prosternum and epimeron of mesothorax yellow. Elytra shiny black without spots, strongly punctured, elytral base as long as or slightly shorter than pronotal base. Legs yellow red.

Specimens examined: one specimen collected from Gabel Elba 25.I.1933.....(MAC)

Local distribution: Red Sea.

World distribution: Egypt, Canary Island and AFR.

CONCLUSION

Chilocorid species which represented subfamily Chilacorinae in Egypt concluded two genera *Chilocorus* and *Parexochomus*, the second genus distinguished by the tarsal claws with indistinct basal tooth in coincided with [18, 25], in contrasting with [17, 26] studied the species of this genus under genus *Exochomus* which distinguished by the tarsal claws with strong basal tooth. Consequently the species of genus *Exochomus* are transferred to genus *Parexochomus*.

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