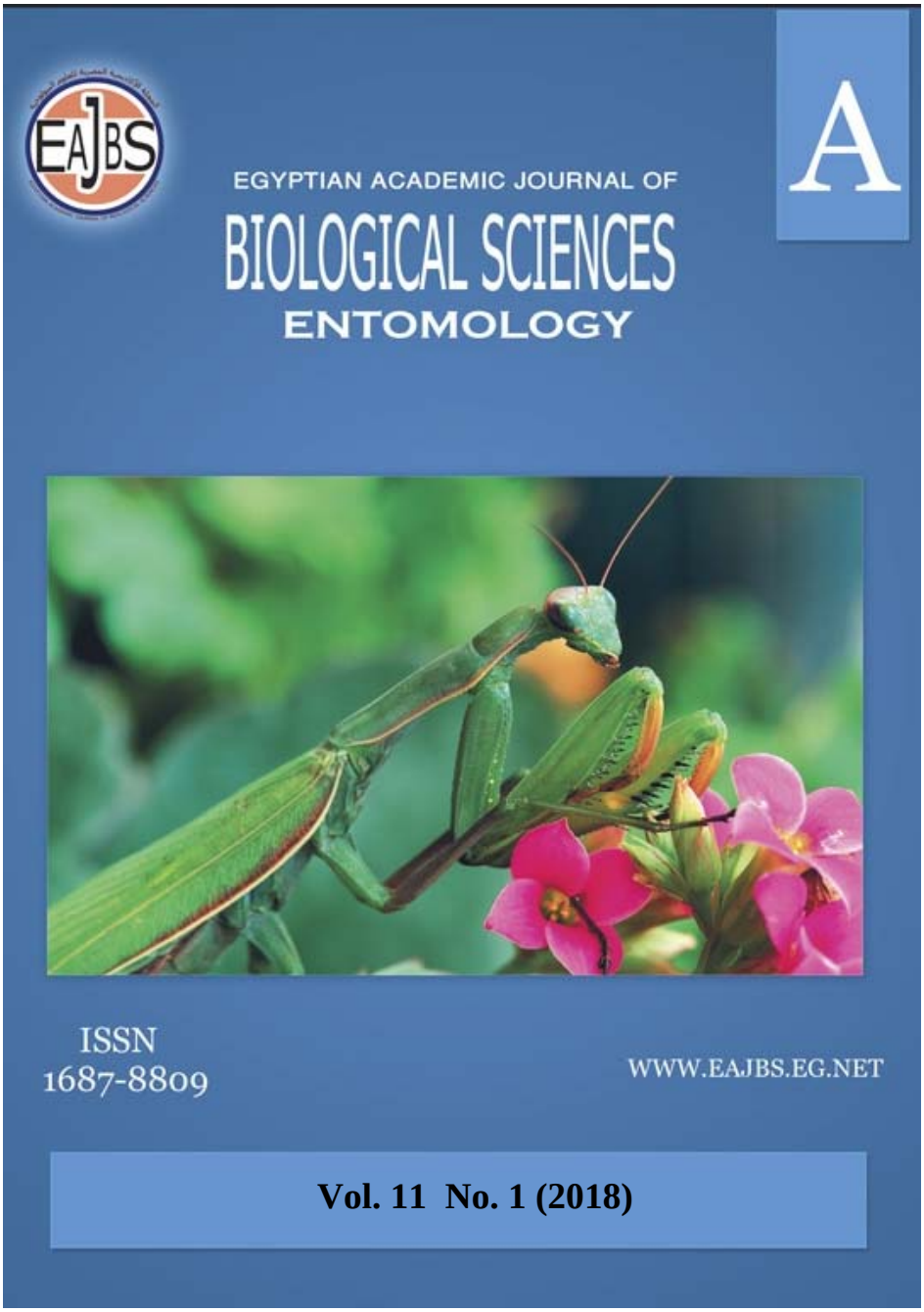


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# Tribe Aleocharini of Egypt (Coleoptera: Staphylinidae: Aleocharinae)

**Emad El-Din Abd El-Fattah Moawad Bibars**
Plant protection Res. Inst. Agriculture Res. Cent., Giza, Egypt
Email: emadeldinbibars@yahoo.com

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**ABSTRACT**

In the present study, fourteen species of tribe Aleocharnin belonging to two genera and five subgenera are recognized from Egypt. The first genus (*Aleochara*) includes twelve species belonging to five subgenera while the second one (*Piochardia*) contains only two species. Key to genera, subgenera and species accompanied with illustrations of taxonomic features and photos of available species are provided. Synonyms, diagnosis, bionomics and distribution of species are present.

## INTRODUCTION

Family Staphylinidae is one of the largest families of beetles with over 46,200 known species placed in more than 3,200 genera. Nearly 400 species are added each year (Newton *et. al*. 2005). Alfieri in his monograph (1976) listed about 255 species of family Staphylinidae from Egypt. According to Smetana (2004), 15 species of tribe Aleocharini are listed from Egypt, 13 species of the genus *Aleochara* Gravenhorst and 2 species of the genus *Piochardia* Heyden. According to Assing (2007) the species *Aleochara ebneri* Scheerpeltz, 1929 which drop under the species *A, moesta* Grav. So the list becomes 14 species recorded in Egypt.

Adult and larvae of the genus *Aleochara* may be found in fly-infested habitats such as carrion, animal droppings, and decay organic matter. Adults are mainly predacious on eggs, larvae, and pupae of cyclorrhaphous Diptera (Klimaszewski & Crosby, 1997). The species of the genus *Piochardia* are associated with the ants of *Cataglyphis bicolor* (F.) (Assing, 1999).

Gravenhorst (1802) was the first who erected the aleocharine genera *Aleochara* and *Callicrus*, and separated them as distinct subfamily. Bernhauer (1901 & 1902) presented a diagnostic key to the genera of the tribe Aleocharini, separating *Piochardia* and *Aleochara* from all other Palaearctic genera by the number of joints of the maxillary and labial palpi. The taxonomic status of tribe Aleocharini was discussed by Fauvel (1886 & 1902), Reitter (1909), Fenyes (1920), Bernhauer and Scheerpeltz (1926), Scheerpeltz (1929), Koch (1934 & 1936), Sawada (1972), Seevers (1978), Klimaszewski (1984), Klimaszewski, and Jansen (1993 & 1994), Assing (1999 & 2007), Smetana (2004), Newton *et al*. (2005), and Park and Ahn (2010). The purpose of the present study is to clarify the taxonomic status of

Egyptian species of the tribe Aleocharini and also to assist in the identification of these species.

## MATERIALS AND METHODS

The practical part of the present study was carried out by the examination of the available specimens of tribe Aleocharini in the main Egyptian reference insect collections, in addition to the fresh materials that are collected during the study from different localities of Egypt. Microscopic preparations were used to illustrate and drawing the taxonomic characters of related species. All drawings were made by square eyepiece. Photographs were taken with Olympus E-330 digital camera joining stereomicroscope. The digital images were then imported into Adobe Photoshop CS5 for labeling and plate composition. The main Egyptian insect collections are: Collection of Ain Shams Univ., Faculty of Science. (ASUC); Collection of Al-Azhar Univ., Faculty of Agriculture (ALFC); Collection of Cairo Univ., Faculty of Science (CUC); Collection of Egyptian Entomology Society (EESC) and Collection of Ministry of Agriculture, Plant Protection Research Institute (MAC).

## RESULTS AND DISCUSSION

### Subfamily: Aleocharinae Fleming, 1821

The Aleocharinae are a widespread and rather large subfamily of Staphylinidae, comprising more than 12,000 species worldwide out of 1740 genera (Herman, 2001).

### Tribe: Aleocharini Fleming, 1821

**Diagnosis:** Tarsi 5-5-5 segmented; each of maxillary and labial palpi with a minute apical pseudosegment (Fig.1). This tribe contains at least fifteen genera worldwide, placed in three subtribes. Only one subtribe, two genera and fourteen species occur in Egypt (Smetana, 2004).

**Key to genera, subgenera and species of tribe Aleocharini Fleming of Egypt**

| | | |
|---|---|---|
| 1 | Maxillary and labial palpi 5- and 4 segmented, respectively, both with terminal pseudosegment (Fig.1); antennomeres 1-3 elongate, 4-10 usually transverse, basal constrictions visible (Figs.2 & 36); body usually with parallel sides, more or less narrowed backwards, but never wedged – shaped (Figs. 29 - 30)…….. Genus: ***Aleochara*** Gravenhorst | (2) |
| - | Maxillary and labial palpi 4- and 3 segmented, respectively, both with terminal pseudosegment; antennae rather short and compact; somewhat flattened; antennomeres contiguous, basal constrictions invisible; body very wide at the front; pronotum very wide, at least as wide as the elytra; elytra short; abdomen continuously tapering from base to apex, wedged-shaped (Fig. 34) …….……..…….Genus: ***Piochardia*** Heyden | (13) |
| 2 | Pronotum with smooth and impunctate median longitudinal area bounded by two longitudinal parallel or subparallel rows of impressed punctures (Fig. 3); mesosternum with longitudinal carina (Fig. 4)…… ……Subgenus: ***Coprochara*** Muls. & Rey | (3) |
| - | Pronotum uniformly punctate (Fig. 36), smooth and impunctate longitudinal median area absent; mesosternum with or without carina… | (4) |
| 3 | Elytra with a pair of large yellowish red spots extending from suture to latero - | |

| | | |
|---|---|---|
| | posterior margins (Fig. 29); pronotum with two smooth, regular longitudinal rows of dense punctures, sparsely punctate at sides (Fig. 3); basal impressions of abdominal terga densely punctate, punctures appearing elongated; aedeagus as in figure 9; spermatheca with 3-4 coils (Fig. 11) ; length 1.5 - 4.5 mm. ..…….……... ***A.* (*Coprochara*) *bipustulatus*** L. | |
| - | Elytra with a pair of small reddish to yellowish spots near posterior margin and suture (Fig. 30); pronotum with punctures of longitudinal rows stronger and deeper, coarsely punctate at sides; basal impressions of abdominal terga sparsely punctate, punctures appearing rounded; aedeagus as in figure 8 spermatheca with 8-12 coils (Fig. 12); length 2.8 - 4.5 mm. …… ***A.* (*Coprochara*) *verna*** Say | |
| 4 | Pronotum very slightly transverse, at most one-fifth wider than long; head very large, almost as wide as pronotum; eyes of normal size, not protruding and moderately arched; legs very slender, metatarsi very long, as long as or longer than metatibiae (Fig. 31); antennae very slender, antennomeres 6-10 at most weakly transverse; 1st to 4th abdominal terga with basal transversal impressions; body reddish brown to black..……..…….. …… Subgenus: ***Rheochara*** Muls. & Rey …….……..……..…. ***A. (Rheochara) renatae*** Koch | |
| - | Pronotum distinctly transverse; head smaller; Legs normal; metatarsi moderately slim, more or less short, distinctly much shorter than metatibiae; 1st to 3rd abdominal terga with basal transversal impressions.. | (5) |
| 5 | Mesosternum without longitudinal carina; Mesosternal process narrow, sharply pointed apically; antennae mostly strongly thickened towards apical end; antennomeres 6 - 10 three times as wide as long (Fig. 2 & 36); pronotum narrower than elytra; abdomen more or less narrowed apically (Fig. 35); smaller species from 2 – 4mm…… Subgenus: ***Heterochara*** Muls. & Rey | (6) |
| - | Mesosternum usually carinate (Fig. 4); Mesosternal process blunt or almost truncated apically; antennomeres 6-10 less than 3 times as wide as long ……..…… | (8) |
| 6<br>- | The third antennomere distinctly shorter than the second, the fourth antennomere strongly transverse and very short, the fifth antennomere nearly twice as wide as the fourth, three times as wide as long, antennomeres 6 – 10 clearly equal in width, narrower than the fifth antennomere; the elytra monochrome red, much longer than the pronotum and longer than the related species; the 7th abdominal tergum of male with strong longitudinal median carina, protruding posteriorly; length 3.2 mm…….. ***A.* (*Heterochara*) *lamellate*** Fauvel | |
| - | The third antennomere equal in length with the second or shorter, fifth antennomere slightly wider than the fourth, two times as wide as long, distinctly narrower than antennomeres 6 – 10…… | (7) |
| 7<br>- | Head wider than half of the pronotum; the third antennomere distinctly shorter than the second; pronotum dull, little shiny, 1.5 times as wide as long, and coarsely punctate; elytra more yellowish than *A. clavicornis*, body length 2mm or less; dorsal surface of 7th abdomenal tergum of male with small granules ……***A.* (*Heterochara*) *bonnairei*** Fauvel | |
| - | Head narrower than half of the pronotum (Fig. 33); 2nd and 3rd antennomeres elongated and with the same length; pronotum strongly glossy, two times as wide as long, sides of pronotum reddish translucent, finer punctate; elytra reddish to yellowish red, with blackish base; body larger, black (2.5 - 3.5 mm); base of antennae, palpi, legs and apex of abdomen yellowish-red; 7th abdomenal terga of | |

| | | |
|---|---|---|
| | male densely punctate, without granules and with small longitudinal median carina, protruding posteriorly ……...… ***A.* (*Heterochara*) *clavicornis*** Redtb. | |
| 8<br>- | Elytra densely punctate, intervals between punctures as long as puncture diameter; abdominal terga distinctly narrowed apically, more or less pointed (Fig. 33) …….……..…… | (9) |
| - | Elytra sparsely punctate, intervals between punctures larger than puncture diameter; abdominal terga with parallel sides or slightly narrowed backwards (Figs. 29, 32 & 37) ……... | (10) |
| 9<br>- | Latero-posterior margins of elytra rounded; pronotum as broad as elytra, twice as wide as long, finer punctate than elytra; frontal abdominal terga densely and evenly punctate; body small (1.5 – 3.0 mm); fore-body brilliant, abdomen dull; antennomeres 6-10 about 1.3 times as wide as long; latero - posterior margin rounded; abdomen constricted backwards, finely and densely punctate; Length 1.5 - 3.0 mm……**Subgenus: *Baryodma*** Muls. & Rey …….. ***A.* (*Baryodma*) *crassa*** Baudi di Selve | |
| - | Latero-posterior margins of elytra clearly emarginated (Fig. 5); pronotum transverse, nearly 1.6 times as wide as long; elytra distinctly transverse, nearly 2.5 times as wide as long; pronotum and elytra finely punctate and densely pubescent; antennomeres 6 -10 slightly transverse, each at most 1.5 times as wide as long; body brown to reddish brown, elytra bicolored, often with 2 transverse paler spots extending from shoulder to outer posterior angle; legs, basal antennal segments, palpi, pronotal margin, and tip of abdomen reddish brown; tergal impressions glabrous or with fine punctuation; length 3 - 5 mm(Fig. 33) …….. **…….*A. (Xenochara) puberula*** Klug | |
| 10 | Latero-posterior margins of elytra rounded; last antennomere longer than the two preceding segments combined; frontal abdominal terga very densely punctate; abdomen with parallel sides ……..…… | (11) |
| - | Latero-posterior margins of elytra slightly emarginated; Frontal abdominal terga sparsely punctate; 4th palpomere short, very narrower than 3rd palpomere basally; apical antennomere as long as the two preceding segments combined; abdomen somewhat narrowed backwards | (12) |
| 11 | Frontal abdominal terga much denser punctate than posterior terga; black; elytra at posterior margin near suture with irregular red to yellowish-red spots (Fig. 32), this spot sometimes occupy a large area of elytra; legs pitch-brown, tarsi brighter; Length 4.5 – 6 mm ……..……. ***A. (Xenochara) tristis*** Gravenhorst | |
| - | Frontal and basal abdominal terga with the same punctures, dense and fine punctures; black; elytra reddish yellow to brown – yellow, darkened to blackish at its base and around suture, sides of elytra brown, sometimes monochrome; base of antennae, palpi and legs brown-red; tarsi brighter; Length 3- 5 mm (Fig. 37)…….. …… ***A. (Xenochara) moesta*** Gravenhorst | |
| 12 | Body black; Elytra with two small to large yellowish-red spots; 3rd antennomere as long as the second, antennomeres 6-10 nealy twice as wide as long; pronotum as wide as elytra, 1.5 times as wide as long, very sparsely punctate; elytra as long as pronotum; abdomen slightly densely punctate; aedeagus as in figure 10; spermatheca (fig. 13); Length 2.5 – 5.5 mm……. **…….*A (Xenochara) laevigata*** Gyllenhal | |
| - | Fore body yellowish red to brick-red, abdomen deep black; 3rd antennomere | |

| | | |
|---|---|---|
| | longer than the second; antennomeres 6-10 nearly1.5 times as wide as long; pronotum slightly narrower than elytra, nearly 1.3 times as wide as long, densely punctate; elytra scarcely longer than pronotum; abdomen impunctate; Length 3.5 mm……..…… ***A. (Xenochara) rutilipennes*** Kraatz | |
| 13 | Pronotum on average more transverse, more than 1.5 times as wide as long, dorsal surface less convex and the sides somewhat flatter; abdominal terga finely and densely punctate; hind margin of abdominal tergum VIII in both sexes with semicircular concavity (Fig. 23); male sternite VIII truncated at apical margin (Fig. 24); aedeagus as in Figure 23; spermathecal as in figure 2.5……..… ……***Piochardia bedeli*** (Fauvel) | |
| - | Pronotum on average less transverse, less than 1.5 times as wide as long; dorsal surface more convex, lateral margins more strongly bent downwards; posterior halves of the abdominal terga (transversal impressions) sparser and coarser punctate; concavity of abdominal tergum VIII less pronounced; male sternite VIII as in figure 20; aedeagus as in Figure 27….……***Piochadia schaumi*** (Kraatz) | |

## (1) Genus: *Aleochara* Gravenhorst, 1802

*Aleochara* Gravenhorst, 1802: 67 [Type species: *Staphylinus curtulus* Goese, Entom. Beytr., 1777: 730]

**Diagnosis:** This diagnosis is modified from Klimaszewski (1984)

Body spindle shaped, narrowly oval or subparallel medially; pronotum large and transverse, hypomera not visible in lateral view; mesocoxae narrowly separated; abdominal terga 3-5 impressed basally with fine to coarse punctate; maxillary palp 4-segmented with an apical pseudosegment; labial palp 3-segmented with an apical pseudosegment; ligula small, bilobed apically; 9$^{th}$ tergum divided by 10$^{th}$ tergum into 2 symmetrical parts.

The genus *Aleochara* is a large group in subfamily Aleocharinae, comprising more than 450 species in 19 subgenera (Park & Ahn, 2010). According to Smetana (2004), only five subgenera occur in Egypt as follow: *Barydoma* Thomson, *Coprochara* Mulsant & Rey., *Heterochara* Mulsant & Rey., *Rheochara* Mulsant & Rey., and *Xenochara* Mulsant & Rey.

### Subgenus: *Baryodma* Thomson

*Baryodma* Thomson Öfversigt af Kongl. Vetenskaps - Akademiens Förhandlingar, 1858, 15: 31 **[**Type species: *Aleochara intricate* Mannerheim, 1830]

### (1) *Aleochara (Baryodma) crassa* Baudi di Selve, 1848

*Aleochara crassa* Baudi di Selve, Studi Entomologici, 1848, 1: 120.
*Aleochara pulicaria* Rosenhauer, Thiere Andal., 1856: 66.
*Aleochara eurynota* Mulsant & Rey, Opusc. Entom., XII, 1861: 98.
*Aleochara punctatissima* W. Seriba, Berl. Entom. Ztschr., 1866: 377.

**Diagnosis:** This species can be recognized by the following characters: black, elytra usually brown or reddish brown, base of antennae, maxillary palpi and legs brownish red; abdomen slightly shiny, strongly constricted with fine and dense punctures.

**Materials examined:** Alexandria, 9/1906; Egypt, 1910 (2 specimens); Abu Rawash, 1912 (4 specimens)…….. **{7 specimens from: EESC}**

**Distribution:** Croatia, France, Greece, Hungary, Italy, Syria, Yemen and Afrotropical Region (Smetana, 2004)

**Subgenus: *Coprochara* Mulsant & Rey**

*Coprochara* Mulsant & Rey, 1874: 146 [Type species: *Aleochara bilineata* Gyllenhal, Ins. Suec, 1810, II, 436].
= *Baryodma* Thomson, 1858.

**Diagnosis:** The subgenus *Coprochara* can be distinguished from the other subgenera of *Aleochara* by the following characters (see details in Klimaszewski, 1984; Klimaszewski & Jansen, 1994; Maus, 1998): antennae thick, antennomeres 5-10 clearly transverse; pronotum with two longitudinal, parallel or subparallel rows of more or less impressed punctures on midline (Fig. 3); elytra in some species with a pair of orange or yellow spots near posterior margin and suture ; mesosternum with complete longitudinal carina (Fig. 4); spermatheca usually multiply coiled posteriorly, varying from 1 to more than 100 coils (Figs. 11–12).

The subgenus *Coprochara* includes 37 species worldwide and 18 species from the Palearctic region (Maus, 1998; Smetana, 2004). This subgenus is widely distributed in all zoogeographical regions (Klimaszewski, 1984). Only two species recorded from Egypt as follow:

**(2) *Aleochara (Coprochara) bipustulatus* Linnaeus, 1760**

*Aleochara bipustulatus* Linnaeus, Fauna suecic,1760: 232.
*Homalola biguttula* Kolenati, Petropoli: Typis Imperialis Academiae Scientiarum, 1848: 8.
*Staphylinus bipunctata* Olivier, Coleopleres, 1795: [42]: 31.
*Aleochara cursor* Stephens, Mandibulata. Vol. V, 1832: 159.
*Aleochara dorsalis* Stepbens, Mandibulata. Vol. V, 1832: 160.
*Baryodma fusconolala* Mulsant &Rey, Paris: Deyrolle, 1874: 155.
*Baryodma laelipennis* Mulsant & Rey, Paris: Deyrolle, 1874: 155.
*Aleochara nitida* Gravenhorst, Brunsuigae: Carolus Reichard,1802: 97.
*Baryodma transita* Mulsant &Rey. Paris: Deyrolle, 1874: 155.
*Aleochara velox* Stepbens, Mandibulata. Vol. V, 1832: 159.
*Aleochara unicolor* Schilsky, Deutsche Enlamolagische Zeitschrift, 1908: 600.

**Diagnosis:** This species differs from *A. (Coprochara) verna* by the following character states: spots of elytra larger; transversal impressions of terga with dense, elongated punctures; aedeagus as in figure 9; spermatheca with 3- 4 thin coils (Fig. 11).

**Materials examined:** Zeiton, 18/3/1906; Abu Rawash, 1912 (2 specimens); 25/12/1910 (3 specimens); Tura, 12/ 12/1908; 11/4/1909; 19/4/1909; Egypt, 1910; Helwan, 9/2/1913; 11/4/1915; Beni Mazar, 3/1915; Mazghuna, 10/3/1907 (7 specimens); 27/9/1908; Maraziq, 2/1908; Hammam, 4/5/1908; 25/5/1908; 2/1909; Khanka, 26/2/1911; Ismailia, without date; 4/10/1912; Pyramides, 2/11/1911; 14/2/1915; 10/3/1916; Heliopois, 15/2/1917 (2 specimens); Alexandria, 27/4/1914 (4 specimens); 3/1916; Marg, without date; Massara, without date (6 specimens) ……..……...……**{47 specimens from: EESC}**
Ezbet El-Nakhal, 2/3/1917; Geuit El-Quseb, 17/3/1916 (3 specimens); Helwan, 23/2/1917 (3 specimens); W. Isla, 10/4/1940; Pyramides, 22/3/ 1912; W. Ghadeirat, 24/5/1935; El-Arish, 22/5/1935; W. hoff, 1/4/1915; El- Kosseima, 23/5/1935; Ismailia, 17/4/1933 ……**{14 specimens from: ALFC}**
Massara, 3/4/1914; Ezbet El-Nakhal, 5/4/1914; W. Hoff, 10/3/1916; Sakkara, 28/1/1934; Fayoum, 29/3/1934; Khataba, 1/4/1934; El – Arish, 22/5/1935; W. Ghadeirat, 24/5/1935; Cairo, 3/1936 ……..….**{23 specimens from: MAC}**
Cairo, 4/7/1936……...…… **{One specimen from: CUC}**
Cairo, without date (3 specimens); Smouha, 17/5/1932 (2 specimens)

……..….**{5 specimens from: ASUC}**
**Distribution:** Europe; North Africa **(**Algeria, Canary Islands, Egypt, Morocco, Tunisia and Madeira); Asia (Egypt: Sinai) [Smetana, 2004].

### (3) *Aleochara (Coprochara) verna* Say, 1833

*Aleochara verna* Say, untitled continuation of Say, 1830, 1833: 58.
*Aleochara altkola* Sharp, Biologia Centrali-Americana. Insecla, Coleoplera.Vol, 1. Part 2. London:1883a: 148.
*Aleochara cedari* Likovsky, Annotationes Zoologicae et Bolanicae, 160, 1984: 8.
*Aleochara languida* Sachse, Entomologische Zeitung (Stettin), 13:1852: 117.
*Baryodma minuta* Casey, Transactions of the Academy of Science of St. Louis 16, 1906: 161.
*Baryodma pauxilla* Mulsant & Rey, Paris: Deyrolle, 1874: 159.
*Baryodma pumilio* Casey, Memoirs on the Coleoplera.II, 1911: 6.
*Aleochara ranumi* Likovsky, Annotationes Zoologicae et Bolanicae, 160, 1984: 8.
*Aleochara lecumseh* Muona, Notulae Entomologicae, 57, 1977: 16.
*Baryodma lolerata* Casey, Memoirs on the Coleoplera.II, 1911: 6.
**Diagnosis:** This species can be distinguished from *A. (Coprochara) bipustilatus* by the following character states: elytra with small yellow spots; transversal impressions of apical terga with sparse and rounded punctates; male and female sternites VIII as in figures 6 and 7 respectively; aedeagus as in figure 8; spermatheca with 8-12 thin coils (Fig. 12)
**Materials examined:** Egypt, 1910…….…. **{One specimen from: EESC}**
Maadi, 27/3/1933 and 9/5/1933……...……. **{2 specimens from: MAC}**
without any data from ……...…… **{One specimen from ASUC}**
**Distribution:** Europe, North Africa **(**Algeria, Canary Islands, Egypt, Libya, Morocco and Madeira); Asia (Smetana 2004).

### Subgenus: *Heterochara* Mulsant & Rey

***Heterochara* Mulsant & Rey, 1874: 15** [Type species *Aleochara clavicornis* L. Redtenbacher, Fn. Austr., 1849 (1): 822].

### (4) *Aleochara (Heterochara) bonnairei* Fauvel, 1898

*Aleochara bonnairei* Fauvel, Revue d 'Entomologie 17, 1898:112.
**Diagnosis:** This species closely related to *A. clavicornis* and can be recognized by the head wider in proportion to the pronotum; 3rd antennomere much shorter than second; pronotum much narrower than elytra with dense hairs; elytra finer and much denser than *A. clavicornis*; 7th tergum in male with small granules.
**Distribution:** North Africa **(**Algeria, Egypt, Tunisia)
**Note:** this species is not represented in the Egyptian collections.

### (5) *Aleochara (Heterochara) clavicornis* Redtenbacher, 1849

*Aleochara clavicornis* Redtenbacher, Fauna Austriaca. Die Kiifer. 1849: 822.
*Aleochara solida* Hochhuth, Bull. Mosc., 1849: 71.
*Aleochara grenieri* Fairmaire & Barneville, Ann. Soc. Entom. France, 1859: 38.
*Aleochara crassicornis* Mulsant & Rey, Paris: Deyrolle, 1874: 36.
**Diagnosis:** This species can be recognized by the following characters: shiny deep black with red elytra, abdominal apical end brownish red, basal segments of antennae, palpi, legs yellowish red; latero-posterior margin of elytra not emarginated; second and third anennomeres equal in length; 5th antennomere wider than 4th and

narrower than 6th – 10th antennomeres; pronotum twice as wide as long, narrower than elytra, strongly polished and finely and densely punctate; 7th abdominal tergum of male with small longitudinal median carina, protruding posteriorly.
**Material examined:** El-Arish, 22/5/1935…….. **{One specimen from: MAC}**
**Distribution:** Europe; North Africa **(**Algeria, Canary Islands, Egypt, Morocco and Madeira); Asia (Egypt: Sinai; Israel; Syria and Yemen) [Smetana, 2004)

### (6) *Aleochara (Heterochara) lamellate* Fauvel, 1886

*Aleochara lamellate* Fauvel, Revue d'Entomologie 5, 1886: 9.
**Diagnosis:** This species differs from the other species of subgenus *Heterochara* by the formation of antennae and the comparatively long elytra; antennae suddenly thick from 5th antennomere; 3rd antennomere distinctly shorter than the second; 4th antennomere strongly transverse, more than twice as wide as long; 5th antennomere more than three times as wide as long, twice as wide as 4th and wider than antennomeres 6 – 10; elytra much longer than pronotum, monochrome red, coarser and sparser punctate than other species; 7th abdominal tergum of male with strong longitudinal median carina, protruding posteriorly.
**Distribution:** Europe (Spain); North Africa **(**Algeria, Egypt) [Smetana, 2004].
**Notes:** This species is not represented in the Egyption collections.

### Subgenus: *Rheochara* Mulsant & Rey

*Rheochara* Mulsant & Rey, 1875: 163 [Type species: *Ocalea spadicea* Erichson, 1837]

### (7) *Aleochara (Rheochara) renatae* Koch, 1936

*Aleochara renatae* Koch, Pubblicazioni del MuseoEntomologico \"Pietro Rossi\" (Duino) I, 1936: 230.
**Diagnosis:** This species easily recognized by the following characters: metatarsi slender and very long, distinctly longer than metatibia; head very large, almost as wide as pronotum; the later very weakly transverse, nearly 1.2 as wide as long.
**Distribution:** North Africa (Egypt).
**Notes:** This species is not represented in the Egyption collections.

### Subgenus: *Xenochara* Mulsant & Rey

*Xenochara* Mulsant & Rey, 1874: 60 [Type species: *Aleochara decorate Aub*é, 1850]
*Xenochara* Mulsant & Rey, 1874: 60.
*Polychara* Mulsant & Rey, 1874: 64.
*Isochara* Bernhauer, 1901: 440, 461.
**Diagnosis:** The subgenus *Xenochara* can be distinguished by the following characters: body small to medium sized (length 1.5 - 7 mm); body uniformly pubescent, on elytra usually directed straight posteriorly; 4th antennomere usually longer than wide (except *A. tristis*, transverse); 4th maxillary palpomere usually long (1/3 to 3/4 length of the third palpomere); mandibular internal tooth absent or weakly present; mesosternum completely carinate or occasionally partially carinate; spines of lateral margins of fore and mesotibia present, absent on metatibia.

### (8) *Aleochara (Xenochara) laevigata* Gyllenhal, 1810

*Aleochara laevigata* Gyllenhal, Insecta Suecica descripta, 1810: 433.
*Aleochara laevigata* Gyllenhal, Insecta Suecica descripta, 1810: 433.
*Aleochara apicalis* Menetries, Catalogue raisonne, 1832: 147

*Aleochara bisignata* Erichson, Die Kafer der Mark Brandenburg, 1837: 357
*Aleochara lonae* GrideIli, Bolletlino dela Societa Enlomologica Italiana 56, 1924b: 41
**Diagnosis:** This species can be recognized by the following characters: body 3-5 mm; shining black; elytra with a pair of small to large yellowish red spots; pronotum and elytra equal in width and length; pronotum glossy and very sparsely punctate; abdomen narrowed backwards, very densely punctate.
**Distribution:** Europe; North Africa **(**Algeria, Egypt, Morocco); Asia. [Smetana, 2004]
**Material examined:** Fayoum ……..... …… **{5 specimens from: MAC}**

**(9) *Aleochara (Xenochara) moesta* Gravenhorst, 1802**

*Aleochara moesta* Gravenhorst, Coleoptera Microptera, 1802: 96.
*Isochara rufipes* Stephens, Mandibulata 5, 1832: 157 (1–240).
*Aleochara (Isochara) ebneri* Scheerpeltz, 1929: 246. Assing (2007: 204) proposed that *A. ebneri* is a new synonym of *Aleochara moesta*.
**Diagnosis:** This species closely related to *A. tristis* and distinguished from it by absence of long, protruding hairs; pronotum somewhat finely punctate, with fine and not dense, yellowish hairs; elytra somewhat less strong and denser punctate than *A. tristis*; abdomen uniformly and extremely densely punctate.
**Materials examined:** Alexandria, 5/1906; 1/1909 (7 specimens); 7/5/1909 (6 specimens); 6/3/1917 (3 specimens); 2/6/1910 (2 specimens); 6/7/1915; 9/1909 (2 specimens); Egypt, 1910 (2 specimens); Mataria, 20/12/1903 (12 specimens); Mariout, 2/5/1911 (3 specimens); Hammam, 2/1909 (2 specimens); Abu Rawash, 1912 (11 specimens); 13/8/1910; 25/12/1910 (2 specimens); Cairo, 7/4/1908; 15/4/1915; 3/11/1903; Heliopolis, 15/2/1917; Shoubra, 3/3/1915; 30/3/1915 (2 specimens); Marg without data (6 specimens); Kouba without data (2 specimens); Ramleh, 10/7/1927; Alag, 7/1/1917… ……..…**{72 specimens from: EESC}**
Kasr El-Nil 15/10/1908 (2 specimens); Faua, 4/1910; Sakkara, 27/11/1932; 4/12/1932; Cairo, 4/1910; Kirdasa, 5/12/1920 (2 specimens); 10/4/1910; Exbet El Nakhl, 2/3/1917 (2 specimens); Helwan, 23/2/1917……...……
……..…**{12 specimens from: ALFC}**
W. Hoff, 10/3/1916; Giza, 26/11/1932; 14/1/1933; Sakkara, 4/12/1932; Cairo, 1/1933…….…..**{6 specimens from: MAC}**
Cairo, 11/1/1936; 25/1/1936; 20/4/1936; 20/5/1936 (2 specimens); 23/5/1936; 1/6/1936; 4/7/1936 (6 specimens); 27/12/1936; 16/1/1937; 20/1/1937 (8 specimens); 27/12/1937……..….**{24 specimens from: CUC}**
Montazah, 4/5/1922; 11/2/1923; Smouha, 16/4/1939…..**{3 specimens from: ASUC}**
**Distribution:** Europe, North Africa **(**Algeria, Canary Islands, Egypt, Morocco, Madeira and Tunsia); Asia.

**(10) *Aleochara (Xenochara) puberula* Klug, 1832**

*Aleochara puberula* Klug, Abhandlungen der Koniglichen Akademie ,1832: 139.
*Oxypoda analis* MacLeay, The Transactions of the Entomological Society of New Soulh Wales 2: 1873: 135.
*Aleochara armilagei* Wollaston, Insecta Maderensia, 1854: 559.
*Aleochara badia* Motschulsky, Bulletin de la Societe Imperiale des Naturalisles de Moscou 31(3) , 1858: 237.
*Baryodma bipartita* Casey, Annals of lhe New York Academy of Sciences 7 [1893], 1894: 287.
*Oxypoda brunnescens* Motschulsky, Bulletin de la Societe Imperiale des Naturalisles

de Moscou 31(3) , 1858: 243.
*Aleochara decorata* Aube, Annales de la Societe Entomologique de France (2) 8, 1850: 311.
*Aleochara deserta* Erichson, Ersler Band, 1839: 173.
*Aleochara dubia* Fauvel, Annales de la Societe Entomologique de France (4) 3, 1863c: 428.
*Aleochara major* Eichelbaum, Berliner Entomologische Zeitschrift 56, 1912: 176.
*Oxypoda sanguinolenta* Motschulsky, Bulletin de la Societe Imperiale des Naturalisles de Moscou 31(3) , 1858: 241.
*Aleochara vaga* Erichson, Ersler Band, 1839: 172.
**Diagnosis:** This species differs from other species by the following characters: latero-posterior margins of elytra emarginated; apical margin of sternum VIII of male rounded (Fig. 14) and slightly emarginated on female (Fig. 15); body brown to reddish brown, elytra bicolored, often with 2 transverse paler spots extending from shoulder to outer posterior angle; legs, basal antennal segments, palpi, pronotal margin, and tip of abdomen reddish brown; $4^{th}$ antennomere longer than wide; $5^{th}$ antennomere transverse; aedeagus as in figure 28 and spermatheca as in figure 16.
**Materials examined:** Luxor, 7/7/1909 (5 specimens); Alexandria, 1910; 8/3/1917; 5/7/1909; 11/7/1908; 16/7/1911 (3 specimens); Warrak, 25/7/1909; Egypt, 1910; Kouba, 15/10/1906(2 specimens); Abu Rawash, 25/12/1910 (4 specimens); Sidi Gaber, 29/7/1917 (2 specimens); Shoubra, 5/4/1915……. **{29 specimens from: EESC}**
Marg, 28/2/1913; Sherbeen, 23/4/1913; W. Rashid, 21/2/1914; Ain Shams, 6/3/1914; Massara, 3/4/1914; Maadi, 10/4/1914; Suez Road, 20/4/1914; Kirdasa, 31/7/1932; 1/10/1933; Giza, 4/11/1932; 15/1/1933; 26/11/1934; Abu Rawash, 29/10/1933; Abu Zabal, 24/6/1934…… ……**{16 specimens from: MAC}**
w. Hoff, 22/1/1933…….. **{One specimen from: ALFC}**
**Distribution:** Europe, North Africa **(**Algeria, Canary Islands, Egypt, Morocco, Madeira and Tunsia); Asia [Smetana, 2004]

### (11) *Aleochara (Xenochara) rutilipennis* Kraatz, 1859

*Aleochara rutilipennis* Kraatz, Archiv fur Nalurgeschichte 25, 1859: 17.
*Aleochara sareptana* Solsky, Fedtschenko, Reise Turk., 1874: 161.
*Aleochara semirubra* Fauvel, Annali del Musea Civico di Storia Naturaledi Genova, 1877, 10: 293.
**Diagnosis:** In addition to the characters of the key, this species can be recognized by the following characters: basal antennomeres 1-3 brown; palpi and legs yellowish red; apical antennomere as long as the two previous segments combined; head wider than half width of pronotum; elytra moderately strong and moderately dense punctate.
**Distribution:** Russia, Egypt, India, Kazakhstan, Uzbekistan [Smetana, 2004]
**Note:** this species is not represented in the Egyptian collection.

### (12) *Aleochara (Xenochara) tristis* Gravenhorst, 1806

*Aleochara (Xenochara) tristis* Gravenhorst, Monographia Coleopterorum Microplerorum., 1806: 170.
*Aleochara bimaculata* Stephens, In: Illustralions of British entomology;1832: 158.
*Staphylinus bipunclala* Olivier, Entomologie, 1795: [42]: 31.
*Aleochara erecreselosa* Jekel, Coleoptera Jekeliana, 1873: 41.
*Aleochara flavomaculala* Menetries, Catalogue raisonne, 1832: 147.
*Staphylinus geometrica* Schrank, Fauna Boica, 1798: 642.

*Baryodma nigripennis* Mulsant & Rey, In: Histoire naturelle des coteopleres de France, 1874b:76.
*Aleochara nigripes* Miller, Verhandlungen des Zoologisch-Bolanischen Vereim'in Wien 2[1852], 1853:27.
**Diagnosis:** This species differs from other species of *Aleochara* by the equal width of abdominal terga; pronotum and elytra with dense protruding pubescence; apical abdominal terga with coarse and dense punctures, the posterior half of these terga less coarsely and less densely punctate; head narrower than half width of pronotum; antennomeres 6-10 distinctly transverse, almost twice as wide as long; pronotum slightly narrower than elytra, nearly 1.5 times as wide as long, glossy and moderately densely punctate; length 4.5 – 6.0 mm.
**Materials examined:** Egypt, 1910; Alag, 7/1/1917 (2 specimens)…….. ……..**{3 specimens from: EESC}**
Giza, 15/1/1933…….……**{5 specimens from: ALFC}**
Giza, 20/11/1932; 26/11/1932; Sakkara, 15/1/1933…..…**{7 specimens from: MAC}**
**Distribution:** Europe, North Africa **(**Algeria, Canary Egypt, Morocco and Tunisia); Asia [Smetana, 2004]

### (2) Genus: *Piochardia* Heyden, 1870

*Piochardia* Heyden, 1870:75 [Type species: *Piochardia lepismiformis* Heyden, 1870]
*Oxysoma* Kraatz, 1857: 17 [Type species Oxysoma schaumii Kraatz, 1857]
**Diagnosis:** this diagnosis is modified from Assing (1999).
Body shape characteristic, wedged-like, with very wide pronotum, short elytra, and abdomen continuously tapering from base to apex (Fig. 34); head transverse and with large eyes; antennae rather short and compact; somewhat flattened, in cross-section more or less ellipsoid; basal constrictions of antennomeres invisible; maxillary and labial palpi 4- and 3-segmented, respectively, both with terminal pseudosegment; ligula broadly bifid; pronotum strongly transverse, much wider posteriorly than anteriorly with maximal width in posterior half; hind angles rounded; hind margin sinuate; hypomera obsolete; elytra clearly shorter than pronotum; hind wings fully developed; longitudinal carina of mesosternum absent; mesosternal process acute and reaching between mesocoxae; legs very long and slender, hind tarsi almost as long as hind tibiae; first joint of metatarsus elongate, at least as long as the combined length of the two following joints; tibiae without spines; abdominal terga without anterior transversal impressions; sexual dimorphism of segment VIII indistinct or absent.
**Male:** median lobe of aedeagus very long and slender, internal sac with weakly sclerotized apical structures and short flagellum (Figs. 26 & 27)
**Female:** spermatheca with large round capsule and short duct (Figs. 22 & 25)
**Bionomics:** Species of *Piochardia* are associated with the genus *Cataglyphis* Foerster (Family: Formicidae: Hymenoptera) most of them have been found with ants of the *Cataglyphis bicolor* species group. Two species recorded from Egypt as follow:

### (13) *Piochardia schaumi* (Kraatz, 1857)

*Oxysoma schaumi* Kraatz, Linnaea Entomologica II, 1857: 18.
*Piochardia sefrensis* Pic, Bull. Soc. Entom. De France, 1897, 22: 233.
**Diagnosis:** Body bicolour**;** head, pronotum and abdomen blackish brown; elytra, margins of pronotum, hind margins of abdominal terga, antennomeres 3-10,

maxillary palpi and legs ferruginous; antennomeres 1- 2 and apical half of antennomere 11 yellowish; pubescence of pronotum, elytra and abdomen less dense than *P. bedeli*; head and pronotum transverse; elytra much shorter than pronotum, finely punctate; metatarsus shorter than metatibia; hind margin of tergum VIII distinctly concave (Fig. 21); hind margin of sternum VIII weakly pointed in both sexes (Fig. 20); aedeagus and spermatheca (Figs.22 & 27).

**Materials examined:** Kirdasa, 5/12/1920……...**{One specimen from: ALFC}** Kirdasa, 1/10/1933; Abu Rawash, 29/10/1933; Barrage, 31/8/1935 ……..……..….. **{5 specimens from: MAC}**

**Distribution:** See Smetana (2004): North Africa **(**Algeria, Egypt, Libya, Morocco and Tunisia); Asia (Jordon).

**(14) *Piochardia bedeli* (Fauvel, 1886)**

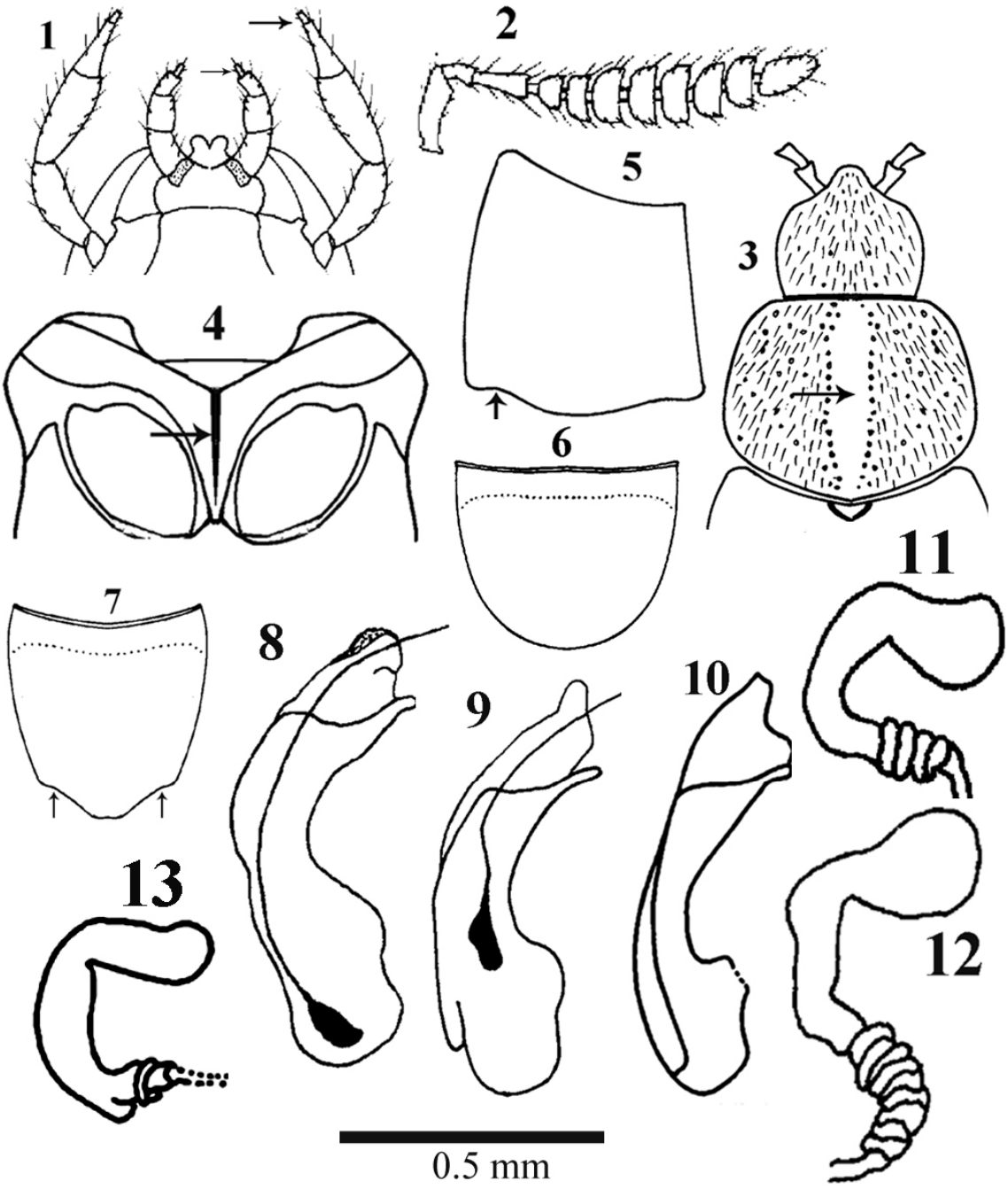
*Oxysoma bedeli* Fauvel, Revue d'Entomologie 5, 1886: 88.

*Piochardia bedeli* (Fauvel): Bernhauer (1902) - Bernhauer & Scheerpeltz (1926) and Fenyes 1920).

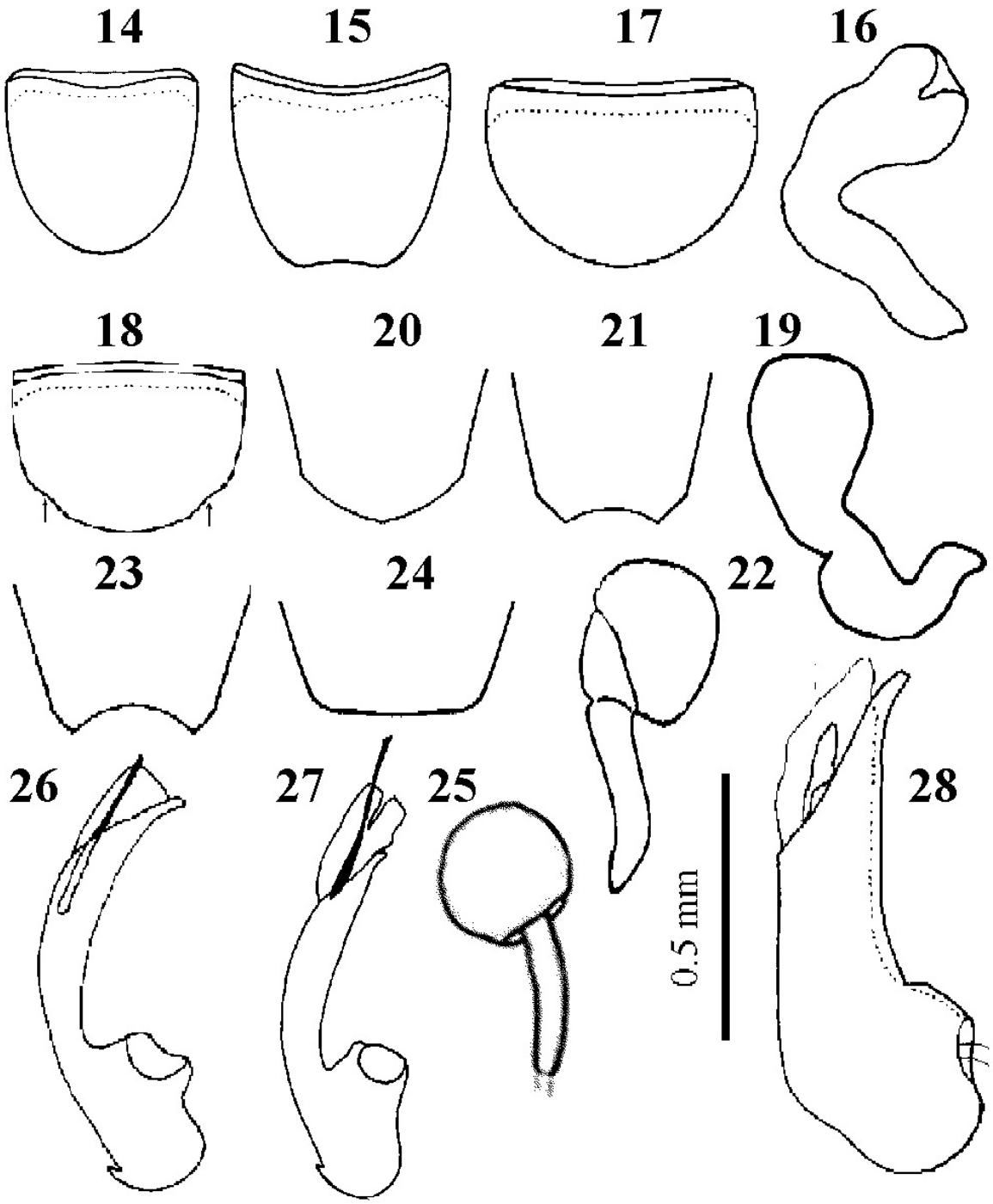
**Diagnosis:** Similar to *P. schaumii* but differs as follow: sides of pronotum usually more widely ferruginous, sometimes most of the pronotum brownish; pubescence of pronotum and elytra denser than in *P. schaumii*; antenna somewhat stouter; antennomere 4 subquadrate to weakly transverse (in *P. schaumi* usually at least slightly oblong) and antennomere 6 more distinctly transverse, approximately two times wider than long; pronotum more transverse, dorsal surface less convex and the sides somewhat flatter, distinct denser punctate; first segment of metatarsi on average relatively longer; abdominal terga finer and denser punctate; hind margin of tergum VIII almost semicircular concavity (Fig. 23), hind margin of male sternite VIII truncated (Fig. 24); aedeagus fig 26. ; spermatheca as in fig. 25

**Distribution:** North Africa **(**Algeria, Tunisia and Egypt).

**Material examined:** Kirdasa, 12/10/1965; (2) Abu Rawash, 20/ 10/1994……..……...**{3 specimens from: MAC}**




Figs. 1, 4, 5 : *A (Xenochara) puberula :* Fig. 1: Maxillary and labial palpi; Fig. 4: Meso and metasternum; Fig 5: left elytron; Fig. 2: Antenna of *A. (Heterochara) clavicornis;* Figs. 3,9,12: *A. (Coprochara) bipustulatus*: Fig. 3: Pronotum; Fig. 9: Aedeagus; Fig. 12: Spermatheca; Figs: 6-8 & 11: *A. ((Coprochara) verna:* Fig. 6: Male sternite VIII; Fig. 7: Female sternite VIII; Fig. 8: Aedeagus; Fig.11: Spermatheca; Figs. 10 & 13: *A. (Xenochara) laevigata* ;Fig.10. Aedeagus; Fig.13:Spermatheca.




Figs. 14 - 16 & 28: *A. (Xenochara) puberula:* Fig. 14: male sternite VIII; Fig.. 15:male tergite VIII; Fig. 16: spermatheca; Fig. 28: aedeagus; Figs. 17 - 19 : *A. (Xenochara) tristis:* Fig. 17: male sternite VIII: Fig. 18: female sternite VIII; Fig. 19: spermatheca; Figs. 20 - 22 & 27 : *Piochardia schaumii*: Fig. 20: male sternite VIII; Fig. 21: female sternite VIII; Fig. 22: spermatheca; Fig. 27: aedeagus; Figs. 23 - 25 & 26 : *Piochardia bedeli:* Fig. 23: male sternite VIII; Fig. 24: female sternite VIII; Fig. 25: spermatheca; Fig. 26: aedeagus.

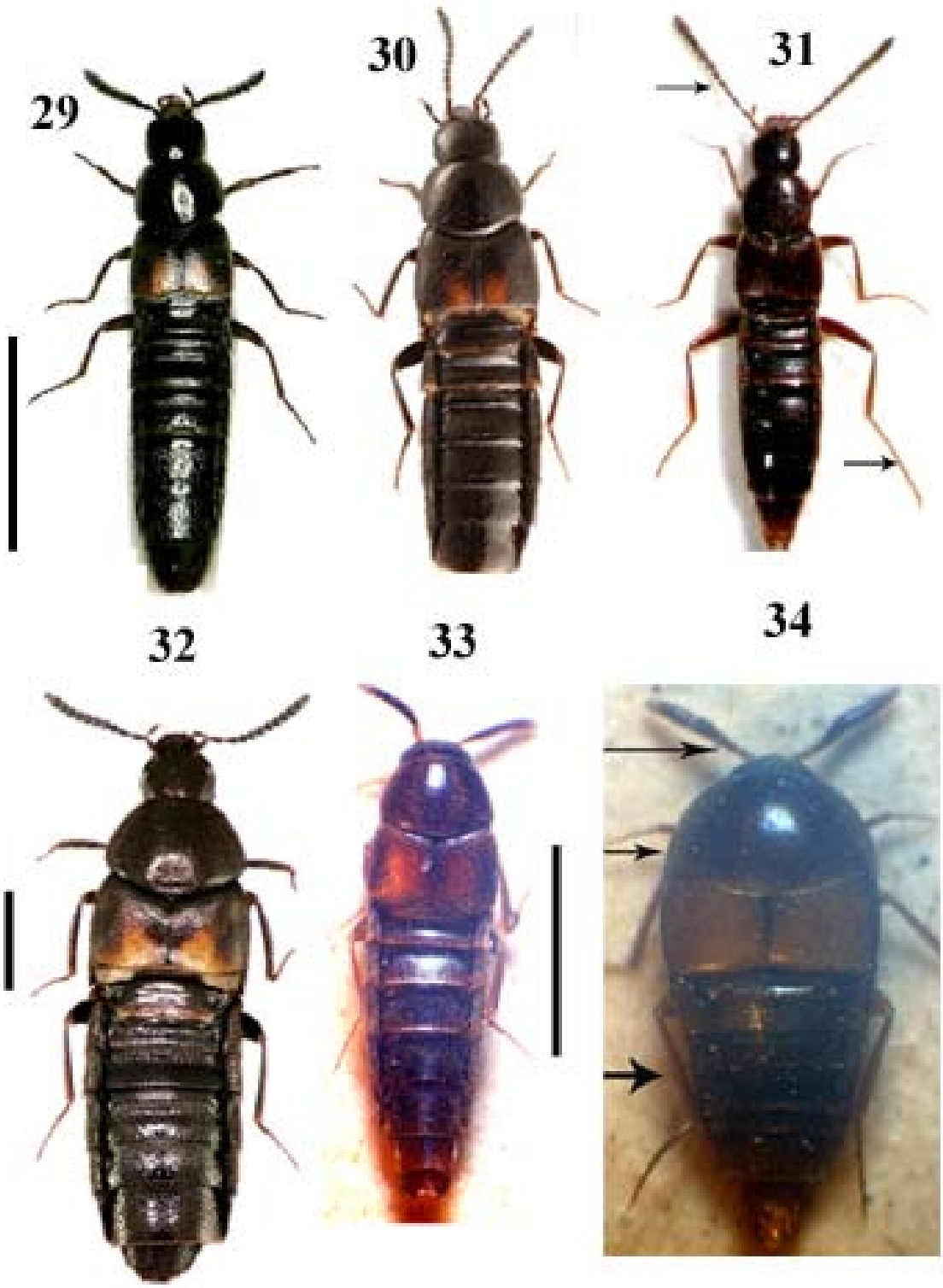
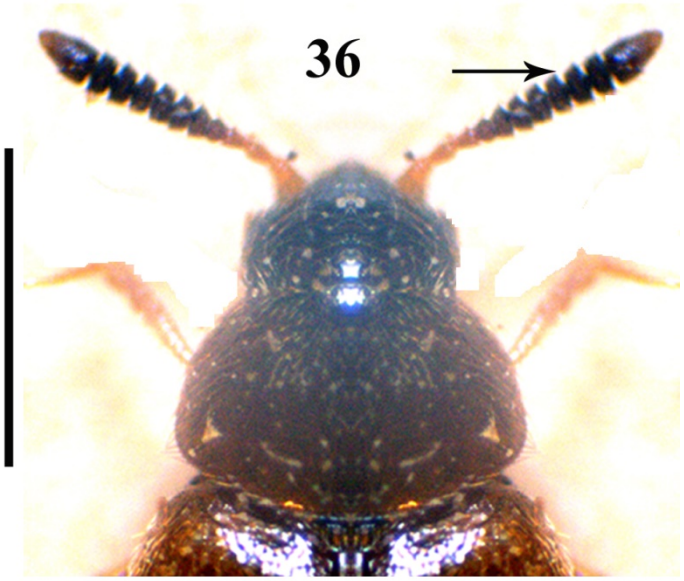



Fig. 29: *A. (Coprochara) bipustulatus*; Fig. 30: *A. (Coprochara) verna*; Fig. 31: *A. (Rheochara) renatae*; Fig. 32: *A. Xenochara) tristis*; Fig. 33: *A. (xenochara) puberula*; Fig. 34: *Piochardia schaumii*.
scale = 1 mm



Figs. 35 - 36: *A. (Heterochara) clavicornis ;* Fig. 37: *A. (Xenochara) moesta.* Scale = 1mm

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