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Taxonomic revision of genus *Trachyderma* Latreilli, 1829 (Coleoptera: Pimelliinae, Tenebrionidae) in Egypt

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Abstract

A taxonomic review of the genus *Trachyderma* of the subfamily Pimelliinae from Egypt is given. The gathered information indicated that the genus *Trachyderma* is represented in Egypt by 9 species. Their diagnostic characters illustrated the habits of adults and illustrations of male genitalia were given. Also concerns the specific name, type locality, classification, and nomenclature of genus and each species.

Introduction:

Pimelliinae is a large tenebrionid subfamily distributed among the deserts and semi-deserts. Tenebrionid beetles present ideal biological models for studies of evolutionary systematics, biogeography, and ecology for the following reasons: they are the large and diverse group; they are geographically and ecologically diverse; they are the relatively old group with fossils; some species are economically important to man both as pest or beneficial; they are relatively easy to collect and maintain live for the behavioral, ecological or molecular studies or rearing; they are relatively character rich in not only adult morphology but also in more evolutionarily conservative immature and internal features as well. The higher classification, zoogeography and world distribution were discussed by many scientists, Koch, 1935, 1940, 1941 and 1955; Keleinikova, 1963; Alfieri, 1976; Salem *et al.*, 1985, 1986 and 2020; Doyen *et al.*, 1989; Medvedev, 1990; El-Moursy *et al.*, 1996, 1998 and 2001; Bouchard *et al.*, 2005, 2007, 2009 and 2011; El-Shewy *et al.*, 2016 and 2023 and Rahik *et al.*, 2023.

The systemic position of *Trachyderma* and their geographical distribution were treated by Reitter, 1904, 1915, 1916 and 1917; Shalaby, 1958; Español, 1959; Watt, 1974 and 1992; Kaszab, 1979-1981 and 1982; Lillig and Pavlicek, 2003; Lawrence and Newton, 2005; López-Pérez, 2010; Löble *et al.*, 2008; Makhan, 2019; Chigray *et al.*, 2022 and Farheen *et al.*, 2024.

The present work is to study a taxonomic review of the genus *Trachyderma* of the subfamily Pimelliinae from Egypt.

Materials and methods

The present taxonomic study focused on the examination of all specimens that were collected during trips by using pitfall traps, in addition to the preserved specimens in the Egyptian Reference Insect Collections of

materials regarded as *Trachyderma* beetles; these collections are; The Egyptian Reference Museum of insects (Plant Protection Research Institute (MAC)), collection of Alfieri (Al-Azhar University, faculty of Agriculture (ALFC)), Collection of faculty of Science (Ain Shams University (ASUC)) and Collection of faculty of Science (Cairo University (CUC)). The specimens were examined with stereoscopic binoculars.

Results and discussion

Genus: *Trachyderma* LATREILLI, 1829

Ocnera FISCHER, 1822: Ent. Ross., I: 169.

Trachyderma LATREILLI, 1829: Cuv. Regne anim, 4: 7.

Type species: *Ocnera imbricate* FISCHER, 1822: Ent. Ross., I: 170.

Body: very elongated and covered with standing hairs.

Head: slightly rectangular; epistome sharply narrow and weakly emarginated bow; mentum transverse, short quadrangular, short, rounded angles; Last palpal segments elongate, slightly triangular; labrum transverse, slightly emarginated; antennae long, rough, hairy, segments obconic, 3rd very long, 4-8 decreasing gradually, 9-10 segments reversed cone in shape, very thick, unequal, 11th small, free, oval, and acuminate at end.

Thorax: Prothorax transverse, convex, rounded on sides, covered with tubercles and standing hairs. Prosternal process prominent curved backward anterior coxae, rarely prominent and acuminate. Elytra elongate, very scarcely wider than the base of prothorax; humeral angles rounded, little depressed on disc, not carinated laterally. Legs long; femur rounded, tuberculated, and hairy; tarsus strongly ciliated and hairy.

Abdomen: with fine tubercles and short hairs.

This genus is represented in Egypt by nine species.

Key of *Trachyderma* species

1- Prosternal process surpassing posterior margin of prosternum (Figures 10, 11) ..……..…….. 2
- Prosternal process not surpassing posterior margin of prosternum (Figure 12) ……..……7
2- Prosternal process short and obtuse with rounded apex (Figure 13) …..…… …….……..…..3
-Prosternum process prominent with acute apex (Figures 15, 18) ……..……...…...6
3-Large insects; Prothorax and elytra with very big tubercles (Figure 23) ……..…..... ……..... ***emondi* SOLIER**
- Small insects; Prothorax and elytra with small tubercles ……..……..……...…… 4
4- Elytra with acute sharp tubercles laterally (Figure 22) …..…… ***andersi* GRIDELLI**
- Elytra with acute blunt tubercles laterally .....……..…… 5
5- Prothorax with small granules and yellowish hairs in between (Figs. 26); middle segments of mid & hind tarsi with golden hairs at apex. ..……. ……..... ***parvicollis* BAUDI**
- Prothorax with small granules and grayish hairs in between; middle segments of mid and hind tarsi without golden hairs at the apex (Figure 9) ……..... ***philistina* REICHE**
6- Prothorax, elytra, and legs with short brown hairs; Prothorax with longitudinal narrow smooth band, slightly deep; elytra with transverse wavy acute wrinkles (Figure 3) ..…..... ……..……..……..….***genei* SOLIER**
- Prothorax, elytra, and legs with long hairs; Prothorax without longitudinal band; elytra without wrinkles ……..……. ***lima* PETAGNA**
7- Tubercles of elytral disc spiny, wide, and pronounced (Figure 25) …… ***leprieuri* ALLARD**
- Tubercles of elytral disc not spiny……..……..…….. 8
8- Primary row consists of numerous narrow dents, a sculpture of elytra dense; body length 17-22mm (Figure 4) ……..... ***hispida* FORSKAL**
- Primary row consists of numerous few wide dents, a sculpture of elytra rare; body length 23-32mm (Figure 7) ……..……. ***major* BAUDI**

***Trachyderma andersi* (Gridelli, 1928)**

Ocnera andersi GRIDELLI, 1928: Boll. Soc. Ent. Ital., 60: 16.

Ocnera andersi; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 185.

Type locality: Egypt: Sinai.

Diagnosis:

Body: 23.5-25mm. in length and 11-12mm. in width. Black, elongated, brilliant, and hairy. Habitus (Fig. 1).

Head: transverse subquadrate, a little brilliant laterally, its length 3-4mm. and width 4.8-6mm. covered with small tubercles. Antennae, a little long, 3rd segment 3 times as long as 2nd, 4-9 segments elongated, 10th wide, 11th acute. Prothorax narrow transverse, anterior margin straight, posterior fringe sinuates and sides little rounded; anterior angles little prominent and posterior angles rounded. Disc with small granules hidden by long hairs. The prosternal process surpassing the prosternum, short and rounded (Fig. 12). Elytra elongated, the base of elytra wide and prominent, the marginal ridge more distinct, and tubercles sharp acute laterally (Figs. 22: a-b). Legs short, thick, tuberculated, and hairs; tarsus strongly ciliated and with long hairs. Abdomen covered with short hairs and small tubercles.

World Distribution: Palearctic species recorded from Arabia and Egypt.

Local Distribution: it is distributed through the Mediterranean coast from Burg El-Arab to Arish, and diffused southwards to the Nile Delta until Cairo.

Material examined: Al Arish, 2. IX. 2003, Ahmed, 1 (Auth); Al Arish, H. Fadl, 2 (ASUC); Bahig, 18. IV. 1963, 1 (MAC); Burg El Arab, 20. IV. 1963, 1 (MAC); Maadi, 21. II. 1934, 1 (MAC).

Trachyderma emondi (**SOLIER**, 1836)

Trachyderma emondi SOLIER, 1836 : Ann. Soc. Ent. France, 5 : 38.

Ocnera longicollis DESBROCHERS, 1881 : Bull. Acad. Hipp.,26 :87.

Ocnera emondi Gridelli, 1930: Esplor. Oasi Giarabub,: 268.

Ocnera emondi; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 185.

Type locality: Egypt.

Diagnosis:

Body: 26mm. in length and 11mm. in width. Black, oblong, and hairy. Habitus Figure 2.

Head: big, little rectangular; its length is 4mm. and the width is 6.5mm. Antennae long, 3rd segment 3 times as long as 2nd, 4-9 segments elongated, 10th wide, 11th acute. Prothorax wide transverse, anterior margin straight, posterior margin slightly curved, anterior angles little prominent, posterior margin rounded. Disc covered with very big, dense, and prominent tubercles anteriorly. The prosternal process surpasses the prosternum, short and curved (Figure 14). Elytra is big and elongated, covered with very big, confused tubercles, and rugose between tubercles (Figs. 23: a-b). Legs long, robust, tuberculated, and hairy; tarsus strong ciliated, and with long hairs. Abdomen covered with short hairs and small tubercles.

World Distribution: This species is known to be endemic to Egypt.

Local Distribution: this species spreads along the Nile Valley from Giza to Lake Naser; also distributes in the western part of the Mediterranean coast. Moreover, it is found in the Sinai Peninsula.

Material examined: Abd Kader Village (Aswan), 17. IX. 1997, H. Fadl, 1 (ASUC); Abu Rawash, 1. VI. 1930, 1 (MAC); Abu Rawash, 21. XII. 1930, 1 (MAC); Ain Mousa, 17. I. 1925, M.T, 2 (MAC); Dabaa 10. V. 1930, Andres, 1 (MAC); Fayoum, 17. XI. 2004, Neven, 1 (Auth); Khour Galal (Aswan), 19. IX. 1997, H. Fadl, 1 (ASUC); Magadiah, 15. VIII. 1928, Mabrouk, 1 (MAC); Masmas Hill, 19. IX. 1997, H. Fadl, 1 (ASUC); Masmas Hill, 16. IX. 1997, H. Fadl, 1 (ASUC); Pyramids, 28. V. 1930, Mabrouk, 1 (MAC); W. Sayyal, 12. XI. 1926, Farag, 1 (MAC).

3. *Trachyderma genei* (SOLIER, 1836)

Trachyderma genei SOLIER, 1836: Ann. Soc. Ent. France, 5: 38.

Ocnera habelmanni KRAATZ, 1865: Rev. Teneb.: 292.

Ocnera genei REITTER, 1893: Best. Tab., 25: 219.

Ocnera genei; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 185.

Type locality: Algeria: Barbara**.**

Diagnosis:

Body: 25mm. in length and 7.5mm. in width. Black, oblong, covered with short hair. Habitus figure 3.

Head: rectangular, its length 4mm. and width 6mm. Antennae are very long, the 3rd segment very long, 4-9 segments elongated and longer than wide, the 10th little wide, and the 11th acuminate. Prothorax convex, slightly square in shape, anterior margin straight and posterior margin little sinuate, anterior, and posterior angles rounded, disc covered with very big obtuse and little approximate tubercles, with a longitudinal narrow smooth band little deep at the middle of the disc. The prosternal process surpasses Prosternum and is very long and prolonged (Fig. 15). Elytra elongated, with very big dense tubercles and wavy wrinkles (Figure 24: a-b). Legs long, tuberculated, and hairy. Abdomen with small tubercles hidden with short hairs.

World Distribution: Mediterranean elements recorded from Egypt, Libya, and Palestine.

Local Distribution: this tenebrionid species is distributed in the northern part of the Nile Valley and spreads to the edge of the Eastern Desert nearest to Cairo. In addition to its diffusion in the Western Desert, Sinai, and the Red Sea coast.

Material examined: Cairo, 1. VII. 1909, Alfieri, 1 (ALFC); Kosseir, 16. II. 1924. Alfieri, 1 (ALFC); Mansouriya, 15. VIII. 1920, Alfieri, 1 (ALFC); Mansouriya, 15. VIII. 1927, Alfieri, 1 (ALFC); W. Ain Ghodirat (Sinai), 24. IV. 2004, M. Salleh, 1 (CUC); W. Digla, 1. VIII. 1924, Alfieri, 1 (ALFC); W. Isla, 2. VIII. 2004, Neven, 1 (Auth); W. Isla, 14. IV. 1940, Alfieri, 1 (ALFC); W. Firan, 5. IX. 1929, Alfieri, 1 (ALFC); W. Mwaged & W. Isla, 2. VIII. 1999, M. S. Abd Eldayem, 1 (MSAC).

***Trachyderma hispida* (FORSKAL, 1775)**

Tenebrio hispida FORSKAL, 1775: Descript. Anim: 79.

Ocnera hispida latreillei SOLIER, 1836: Ann. Soc. Ent. France, 5: 38. (New synonym).

Ocnera hispida; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 185.

Type locality: Egypt: Alexandria.

Diagnosis:

Body: 19-24mm. in length and 9-10.5mm. in width. Black, oblong, covered with loose hairs. Habitus (Fig. 4.

Head: slightly rectangular in shape, its length 3mm. and width 5mm.; covered with small distant tubercles and reddish hairs. Antennae long, 3rd segment very long, 4-9 segments elongated and longer than wide, 10th little wide and 11th acuminate. Prothorax convex, anterior, and posterior margins straight, anterior, and posterior angles rounded. Disc with rounded tubercles, which are very big on the sides. The prosternal process does not surpass the prosternum (Fig. 16). Elytra elongated, margins of elytra with very big prominent tubercles and disc with deep scattered tubercles. The legs are thick, tuberculated, and hairy. Abdomen with small tubercles. Male genitalia (Figs.27 a-f).

World Distribution: Palearctic species are distributed in Arabia, Egypt, Libya, Niger, Oman, Palestine, Somalia and Yemen.

Local Distribution: Generally distributed and very common species. It is spread in all Egyptian areas.

Material examined: Abd El Kader Village (Aswan), IV, H. Fadl, 7 (ASUC); Abords temple, 15.II.1924, Alfieri, 1 (ALFC); Abu El Hassan El Shazely Road, 28. VI.1994, 1 (ASUC); Abu Homous, VII.1974, 1 (MAC);

Abu Qir, 10.IV.1955, Aly and S.H., 5 (ASUC); Abu Qurqas, 3. VIII. 1974, 4 (MAC); Abu Ramad, 28. I. 1997, H. Fadl, 12 (ASUC); Abu Rawash, 5. III. 1975, 82 (MAC); Abu Rawash, 10. V. 1953, Aly, 1 (ASUC); Abu Rawash, 26. X. 1948, M.b, 1 (CUC); Abu Sumbil, 4. IV. 1931, 1 (MAC); Alexandria, 10. I. 1909, Alfieri, 1 (ALFC); Alexandria, 6. II. 1915, Alfieri, 1 (ALFC); Amriah, 26. VI. 1935, 1 (MAC); Amriya, 5. V. 1912, Alfieri, 1 (ALFC); Assiout, 1. XI. 1927, Andres, 2 (MAC); Asswan, 6. III. 1931, 6 (MAC); Aswan, 6. III. 2003, H. Fadl, 2 (ASUC); Aswan, 6. IV. 2002, H. Fadl, 1 (ASUC); Aswan, 30. IX. 1993, H. Fadl, 1 (ASUC); Aswan, 20. X. 1927, Andres, 7 (MAC); B.El Arab, 3. III. 1955, Aly, 3 (ASUC); B.El Arab, 9. IV. 1955, Aly, 1 (ASUC); Baharia Oasis, 11. V. 1992, 1 (ASUC); Baharia Oasis, H. Fadl, 5 (ASUC); Bahig, 18. IV. 1963, 1 (MAC); Banha, 16. IX. 2003, H. Fadl, 2 (ASUC); Banha, 16. IX. 2003, H. Fadl, 2 (ASUC); Bani Sweif, 22. IV. 1975, 1 (MAC); Beni Mazar, 23. III. 1916, Ferrante, 1 (EESC); Cairo, 15. II. 1996, 1 (ASUC); Cairo, 1. III. 1914, Ragab, 1 (MAC); Cairo, 26. III. 1996, 1 (ASUC); Cairo, 13. III. 1998, 2 (ASUC); Cairo, 18. IV. 1996, 2 (ASUC); Cairo, 11. IV. 1996, 1 (ASUC); Cairo, 22. IV. 1998, 2 (ASUC); Cairo, 6. IV. 2002, 1 (ASUC); Cairo, 10. IV. 2005, Neven, 1 (Auth); Cairo, 1. V. 1996, 6 (ASUC).

***Trachyderma leprieuri* (ALLARD, 1886)**

Ocnera leprieuri ALLARD, 1886: Descr. de 6 nouv. esp. de Col. heteromeres: 4.

Ocnera sparsispina BOEHM, 1914: Bull. Soc. Ent. Egypt, 4: 65.

Ocnera leprieuri; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Egypt.

Diagnosis:

Body: 23-24mm. in length and 11-11.5mm. in width. Black, oblong, and covered with loose hairs. Habitus (Figure 5).

Head: slightly square in shape, its length 3.3mm. and width 4mm.; covered with fine tubercles. Antennae long, 3rd segment very long, 4-9 segments elongated and longer than wide, 10th little wide and 11th acuminate. Prothorax transverse and little convex, anterior, and posterior margins straight, anterior, and posterior angles rounded. Disc with obconic loose tubercles, big elongate laterally. Prosternal process not surpassing prosternum (Figures 12, 17). Elytra elongated, tubercles very acute spiny laterally (Figure 25b) and little spiny in the middle (Figure 25a). Legs robust, tuberculated with hairs. Abdomen with small tubercles. Male genitalia (Figure 28 a-f).

World Distribution: Mediterranean species recorded from Egypt, Libya, and Palestine.

Local Distribution: it occurs along the Mediterranean coast from Salloum in the west to Arish in the east; and spreads southwardly through the Western Desert until Siwa Oasis, Wadi Natroun, and Lack Qaroun. Moreover, it is recorded from the Isthmic desert at Suez and Gebel Elba.

Material examined: Abu Mina, 8. IV. 1954, Aly, 1 (ASUC); Abu Qir, 1 (MAC); Abu Qir, 10. V. 2005, Neven, 1 (Auth); Amria, 11. VII. 1934, 4 (MAC); Amria, 19. VII. 2003, 4 (MAC); Bahig, 1. III. 1927, Alfieri, 1 (ALFC); Bahig, 18. IV. 1963, 53 (MAC); Bahig, 24. IV. 2003, Ragab, 34 (Auth); Baltim, 10. VII. 1926, Andres, 1 (MAC); Burg, 25. III. 1927, Tawfik, 1 (MAC); Burg Abu Sir, 2. V. 1956, Sh.M, 2 (CUC); Burg Abu Sir, 3. V. 1956, Sh.M, 1 (CUC); Burg Abu Sir, 4. V. 1956, Sh.M, 1 (CUC); Burg Abu Sir, 5. V. 1956, Sh.M, 1 (CUC); Burg Abu Sir, 6. V. 1956, Sh.M, 1 (CUC); Burg El Arab, 9. IV. 1954, Aly, 1 (ASUC); Burg El Arab, 25. II. 1932, 1 (MAC); Burg El Arab, 20. IV. 1963, 17 (MAC); Burg El Arab, 20. IV. 2004, Neven, 10 (Auth); Burg El Arab, 19. V. 1963, 10 (MAC); Burg El Arab, 19. V. 2005, Neven, 1 (Auth); Burg El Arab, X. 1958, 1 (MAC); Burg Mariout, 28. I. 1924, H.C.E., 1 (MAC); Dabaa, 10. V. 1930, Andres, 10 (MAC); Dabaa Mariout, 25. III. 1931, 14 (MAC); Dekheila, 5. VIII. 1938, Carneri, 1 (ASUC); El Arish, H. Fadl, 2 (ASUC); El Hammam, 18.

IV. 1917, Alfieri, 1 (ALFC); El Hammam, 16. III. 1930, Andres, 1 (MAC); El Hammam, 10. V. 2005, Mahmod, 1 (Auth); El Negela, 24. VIII. 1989, H. Fadl, 12 (ASUC); Gabal Elba, 12 and 19. XII. 2003, Ashraf, 1 (Auth); Hamamat, 26. VII. 1926, Andres, 3 (MAC); Kasr Matrouh, 26. II. 1964, 1 (MAC).

***Trachyderma lima* (PETAGNA, 1819)**

Ocnera lima PETAGNA, 1819 : Atti. Accad. Napoli, 1 : 29.

Ocnera angustata SOLIER, 1836 : Ann. Soc. Ent. France, 5 : 37.

Ocnera lima ; ALFIERI, 1976 : Mem. Soc. Ent. Egypt, 5 : 186.

Type locality: Algeria: Oran (= Wahran)

Diagnosis:

Body: 18-23mm. in length and 8.5-11mm. in width. Black, oblong, with long hairs. Habitus figure 6.

Head: wide, rectangular in shape, its length 2mm. and width 3mm; covered with dense tubercles. Antennae are very long, the 3rd segment very long, 4-9 segments elongated and longer than wide, the 10th little wide, and the 11th acuminate. Prothorax very convex, swollen, and square in shape; anterior margin straight and posterior margin curved; anterior and posterior angles little prominent. Disc with small dense obconic tubercles and long distant hairs. The prosternal process is very long, surpassing the prosternum (Fig. 11, 18). Elytra elongated, covered with very few big tubercles, disposed approximately in rows existing in the lateral part, and deeply punctated between rows of tubercles, with long distant hairs. Legs long, robust, tuberculated and hairy. Abdomen with small tubercles.

World Distribution: Mediterranean species recorded from Algeria, Egypt, and Palestine.

Local Distribution: This species is recorded in sporadic sites along the Nile Valley from Cairo to Aswan; also recorded from the Eastern Desert and Gebel Elba.

Material examined: Abu Rawash, V. 1956, 1 (CUC); Abu Rawash, V. 1956, 2 (CUC); Abu Rawash, Dr. Knhnelt, 1 (CUC); Maadi, 10. III. 2007, Neven, 1 (Auth); W. Aideib (Gabal Elba), 12 and 19. XII. 2003, Ashraf, 1 (Auth); Without Label, H. Fadl, 1 (ASUC); Without Label, 1 (ASUC).

***Trachyderma major* (BAUDI, 1875)**

Ocnera hispida var. major Baudi, 1875: Ann. Mus. Genova, 7: 684.

Ocnera hispida var. major; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 185.

Type locality: Algeria.

Diagnosis:

Body: 30-32mm. in length and 12-14mm. in width. Black, oblong, covered with loose hairs. Habitus figure 7.

Head: slightly rectangular in shape, its length 5mm. and width 6mm.; covered with big dense tubercles. Antennae long, 3rd segment very long, 4-9 segments elongated and longer than wide, 10th little wide and 11th acuminate. Prothorax big transverse: anterior margin straight and posterior margin sinuate; lateral sides rounded; anterior and posterior angles rounded. Disc with dense big tubercles. The prosternal process does not surpass the Prosternum (Fig. 19). Elytra is elongated, with big tubercles in 3 dorsal rows and distant hairs, and the first-row smooth consists of a few numerous, wide other distant dents. The legs are robust, hairy, and tuberculated. Abdomen with small tubercles. Male genitalia (Fig. 29 a-c).

World Distribution: Mediterranean elements are distributed in North Africa and Palestine.

Local Distribution: this beetle species is distributed in the Western Desert, and it diffuses northwardly to Alexandria on the Mediterranean coast. Also spreads along the Nile Valley from Cairo to Aswan, and along the Red Sea coast until Gebel Elba. It also occurs in the Sinai Peninsula.

Material examined: Abu Hommus, 22. VIII. 1974, 1 (MAC); Abu Qir, 21. X, 1 (MAC); Abu Qurqas, 2. V. 1975, 1 (MAC); Abu Rawash, 1. VI. 1930, 2 (MAC); Abu

Rawash, 4. VIII. 1975, 1 (MAC); Assuit, 25. V. 1970, 1 (MAC); Dakhla Oasis, 29. III. 1963, 1 (MAC); El Moaskar, H. Fadl, 2 (ASUC); El Moaskar, 2 (ASUC); Fayoum, 17. XI. 1994, 1 (CUC); Gebel Elba, 15. III. 1928, Tewfeik, 2 (MAC); Giza, XII. 1969, 1 (CUC); Helwan, 5. III. 1930, 1 (MAC).

***Trachyderma parvicollis* (BAUDI, 1875)**

Ocnera parvicollis BAUDI, 1875: Ann. Mus. Genova, 7: 686.

Ocnera parvicollis; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Arab Gulf.

Diagnosis:

Body: 19-21mm. in length and 9-12mm. in width. Black, sub-oval, covered with long hairs. Habitus figure 8.

Head: big, its length 3-4mm. and width 4.8-6 mm., with loose punctated and tubercles. Antennae long, 3rd segment 3 time as long as 2nd, 4-9 segments elongated, 10th wide, 11th acute. Prothorax subspherical, wide scarcely short, covered with little dense granules and without grayish pubescence. Anterior margin straight, posterior margin slightly curved; anterior angles slightly prominent, posterior angles rounded. Prosternal process a little surpassing the prosternum, short curved (Fig.10, 20). Elytra oval, with tubercles and wide at humeral sides (Figs. 26). Legs long, robust, tuberculated and hairy; middle segments of mid and hind tarsi at apex dorsal surface with golden hair brush. Abdomen with small tubercles. Male genitalia (Fig. 30 a-f).

World Distribution: Palearctic species recorded from Egypt, Iran, Iraq and Syria.

Local Distribution: it is common in Sinai, and sporadically recorded from Lower Nile Valley and Gebel Elba.

Material examined: El Maghra, 5. III. 1997, M. S. Abdel Dayem, 3 (CUC); Gebel Elba, 15. III. 1928, Tewfeik, 1 (MAC); Kerdasa, 23. II. 1927, Mabrouk, 2 (MAC); Pyramids, 16. VII. 1930, Mabrouk, 1 (MAC); Saint Kathrine, 22. V. 1997, H. Fadl, 1 (ASUC); Sinai, 10. III. 2004, Ahmed, 1 (Auth); Sinai, 12. III. 2005, Mohamed, 1 (Auth); Sinai, 9. V. 2003, Ahmed, 1 (Auth); W. Ain Ghodirat (Sinai), 24. IV. 2004, M. S. Abdel Dayem, 2 (CUC); W. Canssissrob (G. Elba), 15. III. 1996, 1 (ASUC); W.El Tamarani, 2. III. 1999, M. S. Abdel Dayem, 1 (CUC); W.El Tamarani, 3. III. 1999, M. S. Abdel Dayem, 1 (CUC).

***Trachyderma philistina* (REICHE-SAULCY, 1857)**

Ocnera philistina REICHE-SAULCY, 1857: Ann. Soc. Ent. France, 26: 214.

Ocnera philistina; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Palestine: Jerusalem.

Diagnosis:

Body: 21-23mm. in length and 10.5-11.25 mm. in width. Black, oblong, dull, little convex and with long hairs. Habitus figure 9.

Head: wide rectangular in shape, its length 3-4mm. and width 4.8-6mm., with loose irregular punctated and tubercles. Antennae long, 3rd segment 3 times as longer as 2nd, 4-9 segments elongated, 10th wide, 11th acute. Prothorax subcylindrical, transverse; anterior and posterior margins straight; angles rounded. Disc covered with small tubercles between them grayish pubescence. Prosternal process surpassing the prosternum, short curved (Figure 21). Elytra oval, very little advanced and obtuse with an elevated extremity; covered with small tubercles, with very big ridge and intervals scarcely rough by

deep spaced points. Legs long, robust, tuberclated and hairy; middle segments of mid and hind tarsi at apex without golden hairs brush. Abdomen with small tubercles.

World Distribution: Palearctic species distributed in Egypt, Greece, Iran, Palestine, and Syria.

Local Distribution: a common species distributed along the western part of the Mediterranean coast and along the Nile Valley; also occurs in the eastern part of the Sinai Peninsula and is recorded from the Eastern Desert.

Material examined: Abu Qir, 10. IV. 1955, Aly, 1 (ASUC); Abu Rawash, 31. III. 1956, Abd Alla, 2 (CUC); Abu Rawash, 10. IV. 1955, Aly, 7 (ASUC); Abu Rawash, 1. VI. 1930, 1 (MAC); Abu Rawash, 30. VII. 1925, Mabrouk, 3 (MAC); Abu Rawash, 15. VIII. 1925, Mabrouk, 1 (MAC); Dabaa, 10. VI. 1930, Andres, 3 (MAC); Eion Mousa, 17. I. 1925, Alfieri, 1 (ALFC); El Arish, 6. VI. 1934, Sh.M, 1 (CUC); Garden kolia, 17. XI. 1997, H. Fadl, 1 (ASUC); Gebel Abu Galib & El Katta, 29. II. 1924, Mabrouk, 4 (MAC); Giza, 9. I. 1954, 1 (CUC).

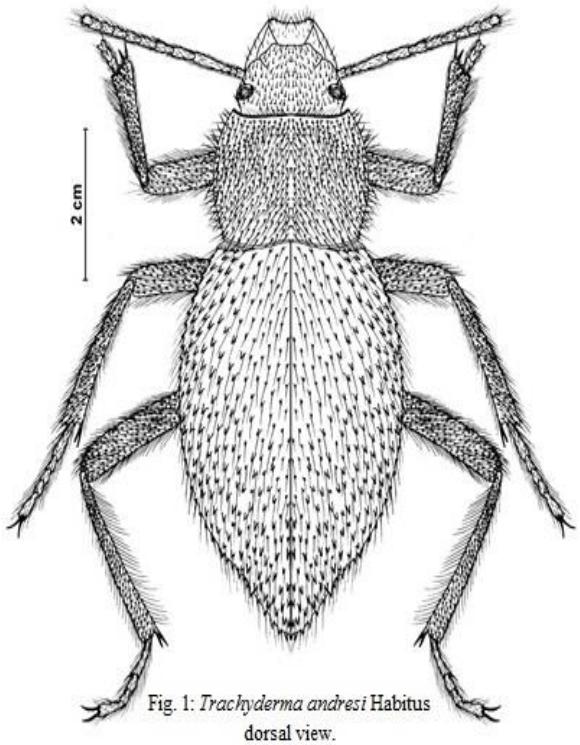


Fig. 1: *Trachyderma andresi* Habitus dorsal view.

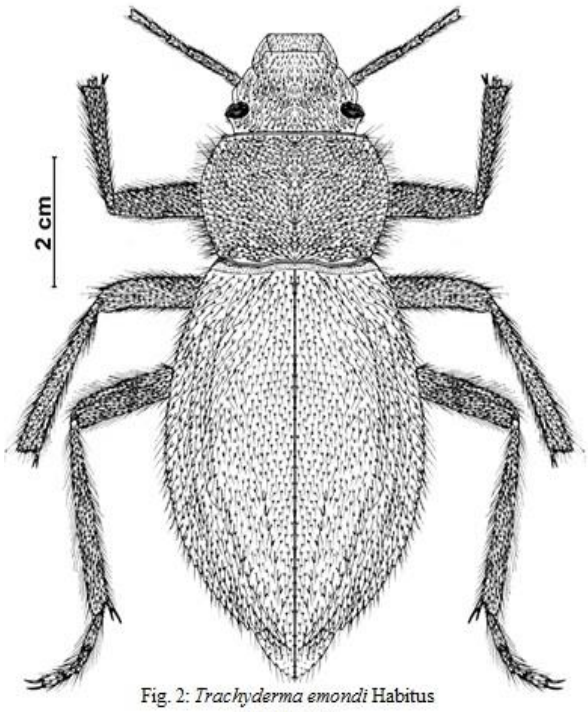


Fig. 2: *Trachyderma emondi* Habitus dorsal view.

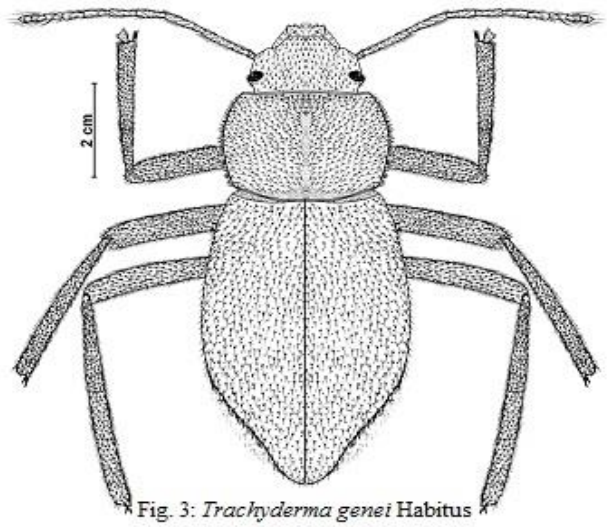


Fig. 3: *Trachyderma genei* Habitus dorsal view.

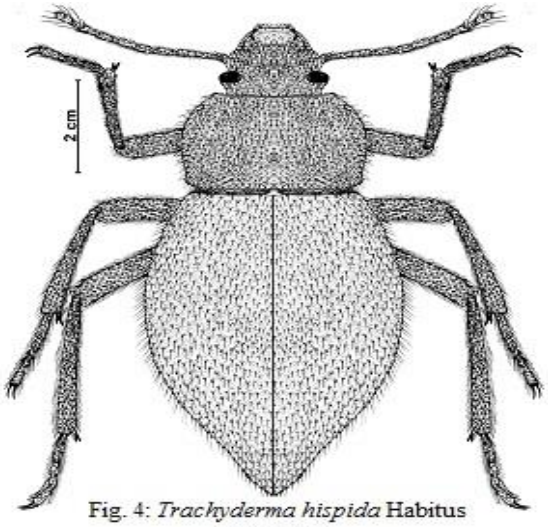


Fig. 4: *Trachyderma hispida* Habitus dorsal view.

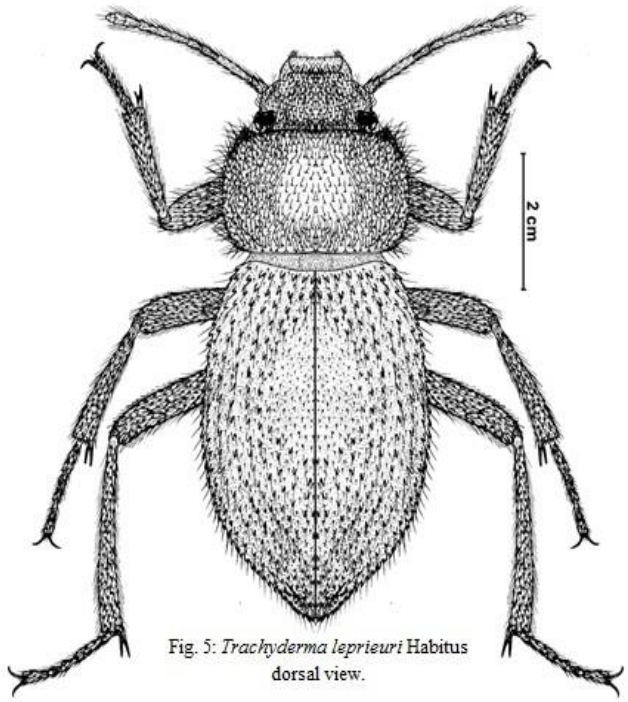


Fig. 5: *Trachyderma leprieuri* Habitus dorsal view.

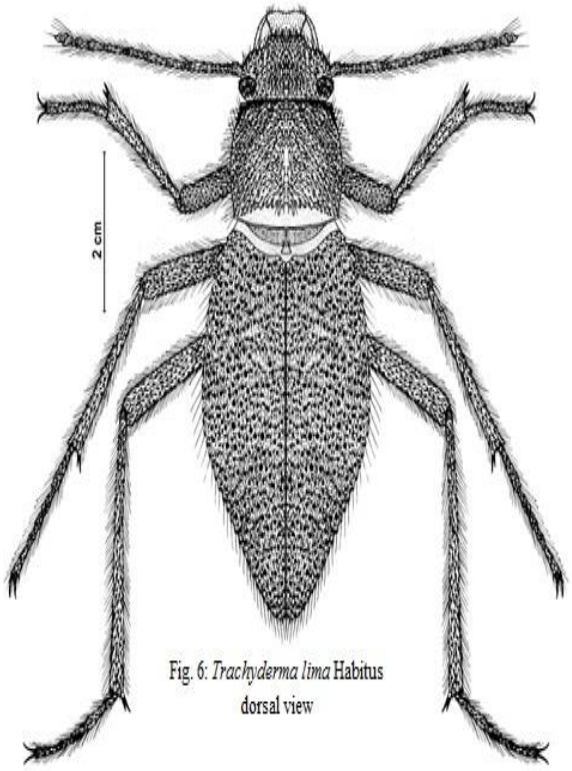


Fig. 6: *Trachyderma lima* Habitus dorsal view

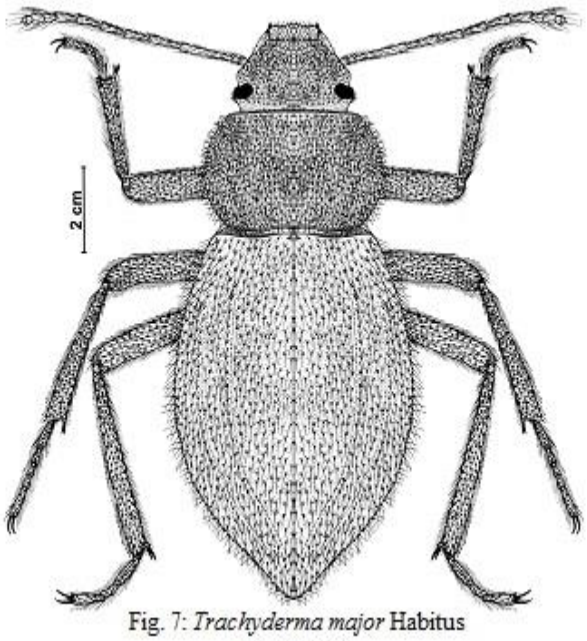


Fig. 7: *Trachyderma major* Habitus dorsal view.

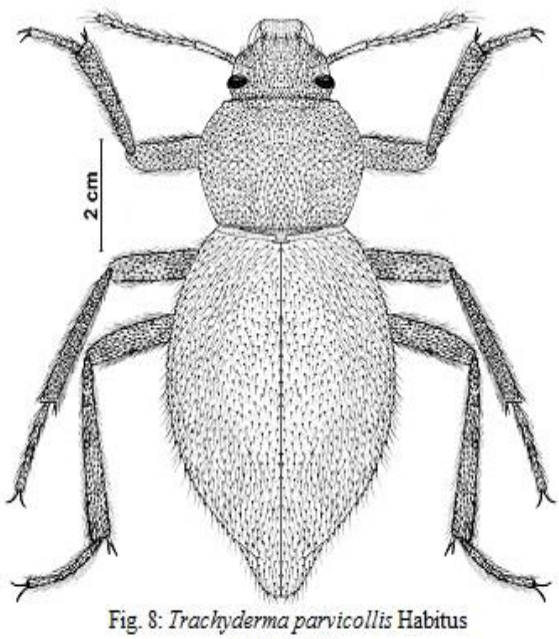


Fig. 8: *Trachyderma parvicollis* Habitus dorsal view.

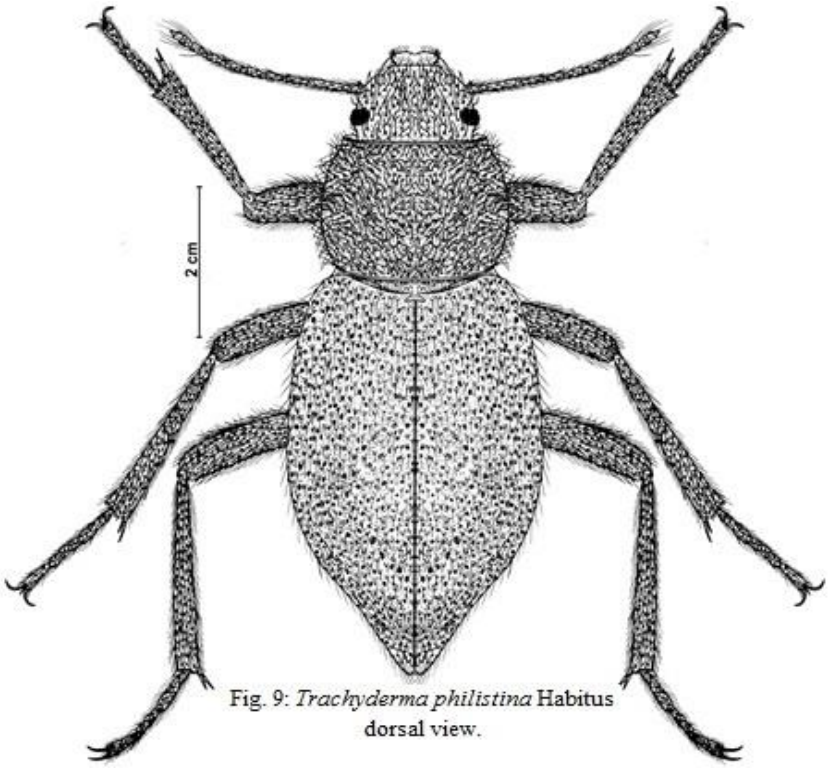
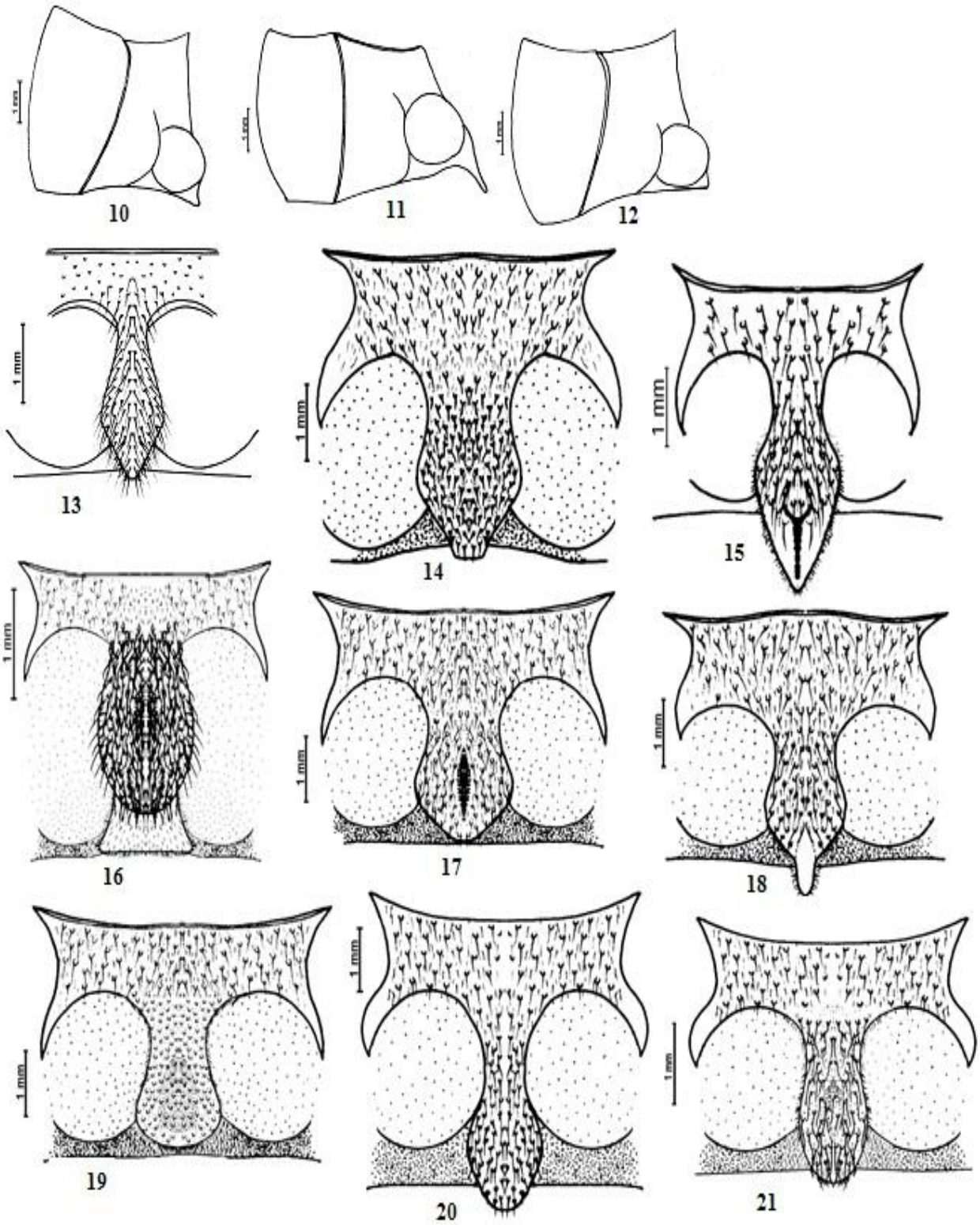
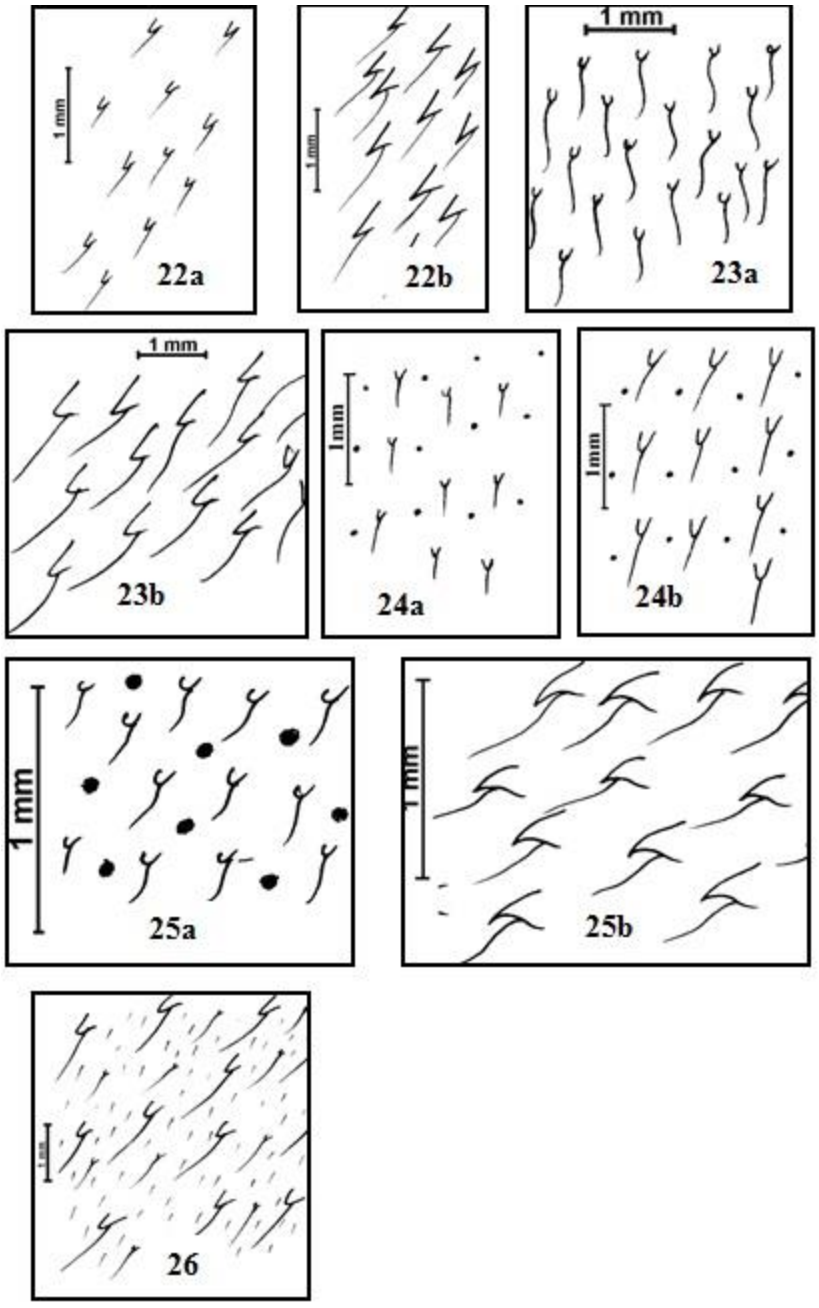


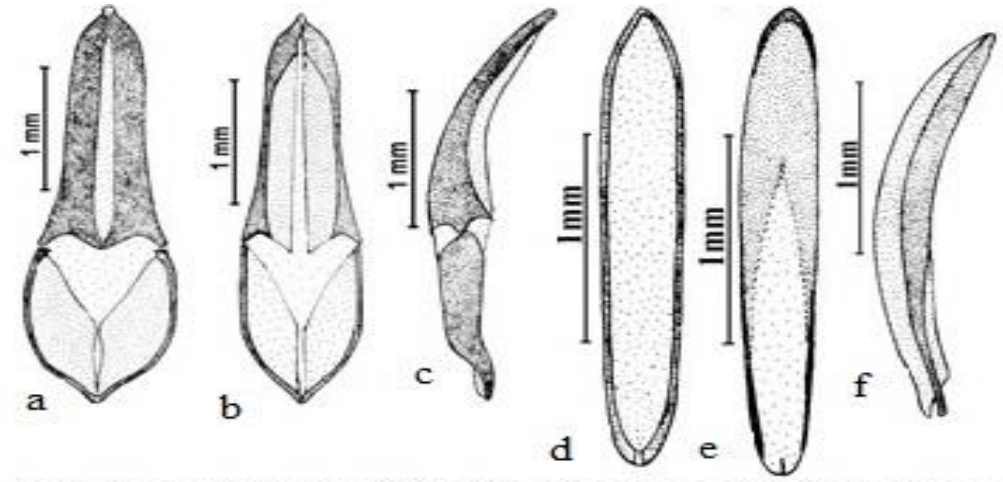
Fig. 9: *Trachyderma philistina* Habitus dorsal view.



Figs.10-21: *Trachyderma* prosternal process; 10: *parvicollis* lateral view; 11: *lima* lateral view; 12: *leprieuri* lateral view; 13: *andersi* dorsal view; 14: *emondi* dorsal view; 15: *genei* dorsal view; 16: *hispida* dorsal view; 17: *leprieuri* dorsal view; 18: *lima* dorsal view; 19: *major* dorsal view; 20: *parvicollis* dorsal view; 21: *philistine* dorsal view.

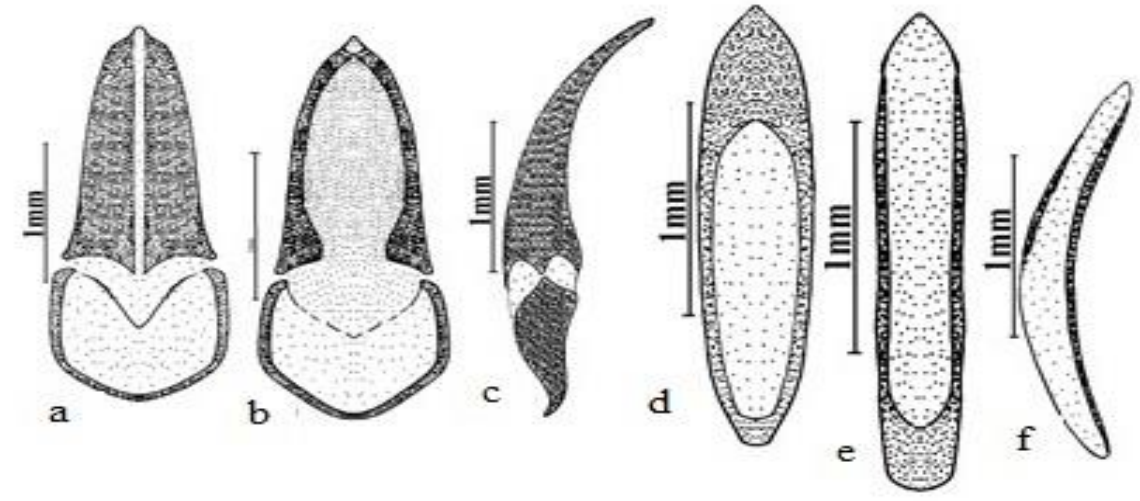


Figs. 22- 26: Sclupture of *Trachyderma* elytral disc. 22a: *andersi* elytra at middle; 22b: *andersi* lateraly; 23a: *emondi* elytra at middle; 23b: *emondi* lateraly; 24a: *genei* elytra at middle; 24b: *genei* lateraly; 25a: *leprieuri* elytra at middle; 25b: *leprieuri* lateraly; 26: *parvicollis* elytra at middle and lateraly.



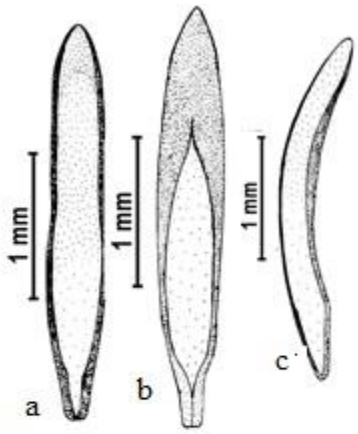
Figs. 27 a-c : Sheath of *hispida* aedeagus; a: dorsal view; b: ventral view; c: lateral view

Figs. d-f: *hispida* aedeagus; d: dorsal view; e: ventral view; f: lateral view;

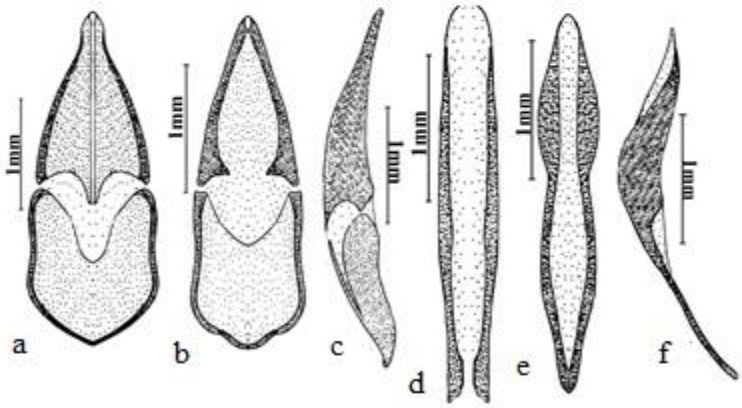


Figs. 28 a-c: Sheath of *leprieuri* aedeagus; a: dorsal view; b: ventral view; c: lateral view;

Figs. d-f: *leprieuri* aedeagus; d: dorsal view; e: ventral view; f: lateral view;



Figs. 29 a-c: *major* aedeagus; a: dorsal view; b: ventral view; c: lateral view;



Figs. 30 a-c : Sheath of *parvicollis* aedeagus; a: dorsal view; b: ventral view; c: lateral view.

Figs. d-f *parvicollis* aedeagus d: dorsal view; e: ventral view; f: lateral view.

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