

Taxonomic Redescription of genus *Thriptera* Solier, 1836 (Coleoptera: Pimelliinae, Tenebrionidae) in Egypt

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Abstract

This study was planned to identify, redescription and determine the recent taxonomic status of genus *Thriptera* Solier in Egypt. The gathered information indicated that genus *Thriptera* is represented in Egypt by 4 species. Their diagnostic characters, illustrated habits of adults and illustration of male genitalia were given.

Keywords: *Thriptera* Pimelliinae, Tenebrionidae, Coleoptera, Egypt

Introduction

Family Tenebrionidae, or darkling beetles, is the fifth largest beetle family, including more than 20000 species belonging to 96 tribes and 10 subfamilies worldwide (Bouchard et al. 2005). Tenebrionid beetles present ideal biological models for studies of evolutionary systematics, biogeography and ecology for the following reasons: they are a large and diverse group; they are geographically and ecologically diverse; they are 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.

Most Tenebrionids occur in semi-arid terrestrial ecosystems, under stones or bark (Tezcan et al. 2012). A few are of direct economic importance as pest attack roots and young crop shoots and others occur as pests in stored grains (Matthews & Bouchard 2008). The higher classification, zoogeography and world distribution were discussed by many investigators (Koch, 1935, 1940; 1941 & 1955; Keleinikova, 1963; Alfieri, 1976; Salem et al 1985, 1986, 1992 & 2020; Doyen et al 1989; Medvedev, 1990; El-Moursy et al 1996, 1998 & 2001; Bouchard et al 2005, 2007, 2009 & 2011; El-Shewy et al 2016 and 2023 and Rahik et al 2023).

The systemic position of *Thriptera* and their geographical distribution were treated by Reitter 1904, 1915, 1916 & 1917; Shalaby 1958; Español 1959; Watt 1974 & 1992; Kaszab, 1979-1981 & 1982; Lillig, and Pavlicek, (2003); Lawrence, and Newton (2005); López-Pérez 2010. recent taxonomic position and senior synonyms are provided following Löble et al (2008).

Material and methods

The present taxonomic work based on examination of all specimens which were collected during trips by using pitfall traps, in addition to the preserved specimens in the Egyptian Reference Insect Collections for materials regarded as *Thriptera* beetles; these collections are; The Egyptian reference museum of insects (plant protection research institute (MAC)),

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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)).

Results

Genus: *Thriptera* Solier, 1836

Thriptera Solier, 1836: Ann. Soc. Ent. France, 5: 48.

Type species: *Thriptera maillei* SOLIER, 1836: Ann. Soc. Ent. France, 5: 50.

Body: Oval and hairy.

Head: Trapezoidal anteriorly; epistome not sharp narrow and notable; Mentum mediocre transverse, sub-rectangular, truncate anteriorly, with sinuate at middle; Maxillary palpi terminated by subcylindrical segments, very scarcely big than penultimate; Labrum transverse, narrow base and truncate at extremity; Eyes transverse and curved; Antenna much shorter than head and prothorax, 2nd segments very short, 3rd segment longer than 2nd, 4-8 segments subcylindrical, thick, longer than wide and rounded ends, 9th and 10th reserved cone and longer than wide, 11th very smaller than penultimate and more or less engage this segment.

Thorax: Prothorax mediocre transverse, convex, and slightly narrow toward base. Elytra oval, wider than prothorax; humeral angles little marked; Scutellum prominent posteriorly and wide posteriorly at trapeze.

Abdomen: Hairy.

This genus is represented in Egypt by four species.

Key to *Thriptera* species

1. Apex of fore tibia unidentate at external edge (Fig. 5); Antennal segments 4-10 moniliform (Fig. 16); Body with big tubercles.....*varvasi* SOLIER

- Apex of fore tibia normal at external edge; Antennal segments filiform; Body with small spread tubercles.....2

2- Pronotum oval globular and convex (Fig. 2); Maximum width at middle; Punctuation of elytra fine and regular (Fig. 10)*pilipes* KRAATZ

- Pronotum transverse not convex; Maximum width after middle; Punctuation of elytra thick and irregular.....3

3- Anterior angles of Pronotum little prominent; fore femur without callus (Fig. 1)*carinata* KLUG

- Anterior angles of Pronotum prominent; fore femur with callus..... *kraatzii* HAAG

Thriptera crinita (KLUG, 1830)

Pimelia crinita KLUG, 1830: Symb. Phys.,2: 22.

Thriptera maillei SOLIER, 1836: Ann. Soc. Ent. France, 5: 50.

Ocnere pygmaea MILLER, 1861: Wien. Ent. Monatschr., 5: 181.

Thriptera crinita; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Egypt: Nubian Land (South of High Dam)

Diagnosis

Body: 15-17 mm. in length and 7-8 mm. in width. Black, oval and hairy. Habitus figure 1.

Head trapeze form; its length 2-2.3 mm. and width 3-3.2 mm.; covered with small tubercles and long hairs, background with small short grayish hairs (Fig. 6); mentum (Fig. 12). Antenna 2nd segments very short, 3rd segment twice time longer than 2nd, 4-8 segments equal, 9th and 10th reserved cone and wider than long, 11th much smaller (Fig. 14). Prothorax transverse, anterior margin slightly straight, posterior margin sinuates at middle, anterior and posterior angles rounded little prominent, disc with very small tubercles (Fig. 6). Elytra plane dorsally, very depressed above and with dorsal obliterate interval striae, especially at middle; lateral ridge punctuated with very remote and little big punctuation (Fig. 9). Scutellum small with pointed end posteriorly. Anterior tibia long, very rough and not terminated externally by dent (Fig. 4).

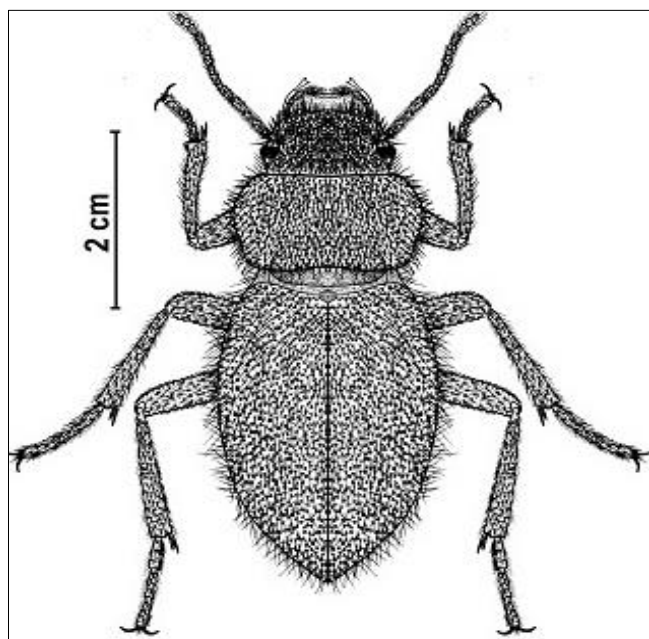


Fig 1: *Thriptera crinita* Habitus dorsal view

Abdomen hairy; Male genitalia (Fig. 18, 20, 22, 24, 26, 28).

World distribution: North African species located in Algeria and Egypt.

Local distribution: A common tenebrionid species that occurs along the Nile Valley from Cairo to Aswan. It is also recorded from western part of Mediterranean coast, Sinai Peninsula, Eastern Desert and Gebel Elba.

Material examined: Abd Kader Village, 17. IX. 1997, H. Fadl, 3 (ASUC); Abords temple, 12. II. 1924. Alfieri, 1 (ALFC); Abu Ramad, 28. I. 1997, H. Fadl, 2 (ASUC); Aswan, 30. I. 1954, Aly, 2 (ASUC); Aswan, 6. III. 1921, 1 (ASUC); Aswan, 6. III. 1931, 10 (MAC); Aswan, 12. IV. 2004, Neven, 2 (Auth); Bir El Gahelia, 3. X. 1995, H. Fadl, 10 (ASUC); Beni Mazar, 11. XI. 1913, Alfieri, 1 (ALFC); Beni Mazar, 11. XI. 1913, Alfieri, 1 (MAC); Beni Mezar, 11. XI. 1919, 1 (ASUC); Beni Mezar, 20. XI. 2005, Neven, 1 (Auth); Esna, 27. I. 1954, Aly, 4 (ASUC); Fateera, 23. I. 1985, H. Fadl, 1 (ASUC); G.Asfar, 12. VIII. 1942, Carneri, 3 (ASUC); Gebel Elba, 15. III. 1928, Alfieri, 1 (ALFC); Gebel Elba, 24. I. 1933, Priesner, 2 (MAC); Helwan, 15. VII. 1895, Ferrante, 1 (EESC); Kafr Hakim, 4. III. 1931, Alfieri, 1 (ALFC); Kirdasa, 20. IV. 1931, Alfieri, 1 (ALFC); Kom Ombo, 29. I. 1954, Aly, 3 (ASUC); Luxor, 15. I. 1927, Alfieri, 1 (ALFC); Luxor, 14. I. 1927. Andres. 4 (MAC); Luxor, 25. I. 1954, Aly, 3 (ASUC); Sinai, IX. 1926, Alfieri, 1 (ALFC); Temple of Dandara, 12. II. 1924, Alfieri, 1 (ALFC); W. Hoff, 15. II. 1910, Alfieri, 1 (ALFC); W. Rachid, V. 1909, Alfieri, 13 (MAC); W. Rashid, 15. I. 1913, Alfieri, 1 (ALFC); W. Rashid, VI. 1917, Alfieri, 1 (ALFC); W. Sei, VII. 1928, Alfieri, 1 (ALFC); West Sinai, 16. IV. 1904, Alfieri, 1 (ALFC); Without Label, Innes Bey, 6 (MAC); Without Label, 1 (MAC).

Thriptera Kraatzii HAAG, 1876

Thriptera Kraatzii HAAG, 1876: Ent. Monatsch, 1: 75.

Thriptera sororcula REITTER, 1894: Wein. Ent. Zeit., 38: 303.

Thriptera Kraatzii; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Algeria.

Diagnosis

Body: 22-24 mm. in length and 8-9.5 mm. in width. Oval and hairy.

Head covered with small tubercles and long hairs. Antenna 2nd segment very short, 3rd segment twice longer than 2nd, 4-8 segments equal, 9th and 10th reserved cone and wider than long, 11th very smaller. Prothorax transverse, narrower than elytra, anterior angles prolonged, tubercles scarcely smaller than that in elytra. Elytra tubercle very strong disposed in series and with punctuation row between tubercles. Femur of male with elongated callus. Abdomen with small yellow spiny hairs.

World distribution: North African element recorded from Algeria and Egypt.

Local distribution: Species recorded in 1907 by Peyerimhoff from the Gulf of Aqaba in Sinai; and no specimen collected since that time.

Thriptera pilipes KRAATZ, 1865

Thriptera pilipes KRAATZ, 1865: Rev. Tenebr.: 299.

Thriptera heydeni REITTER, 1893: Best.- Tab., 25: 214.

Thriptera guyoti ANDRES, 1920: Ent. Blatt., 16: 70.

Thriptera pilipes; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Egypt.

Diagnosis

Body: 18-20 mm. in length and 9-10 mm. in width. Black, oblong oval and with grayish hairs. Habitus figure 2. Head slightly rectangular shape, its length 3mm. and width 3.2mm., fine tubercles and with long distant hairs (Fig. 7). Eyes big. Antennae long hairy, 3rd segment three times as long as 2nd, 4-9 segments elongated, 10th nearly as wide as long, 11th short and acuminate (Fig. 15). Prothorax small, narrow, subquadrate form; anterior margin very slightly sinuate; posterior margin slightly curved; angles rounded; disc with tubercles, nearly same gross as elytra; Prothorax with densely standing long hairs. Elytra oblong oval, with dense punctuated striae, intervals with tubercles and densely enclosed long, grey hairs (Fig. 10). Tibia bright and red brown filiform, not dentate. Abdomen like dorsal side except something short hairs. Male genitalia (Fig. 19, 21, 23, 25, 27, 29).

World distribution: Endemic to Egypt.

Local distribution: This species is common in the north of Lower Nile Valley and sporadically recorded from Sinai and Eastern Desert.

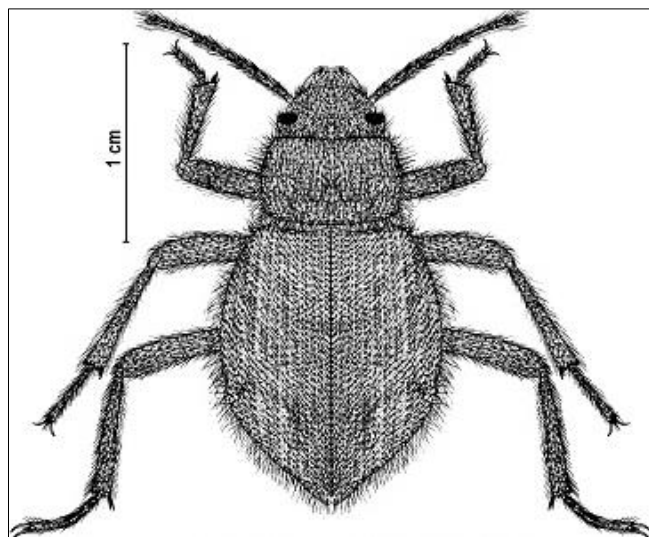


Fig 2: *Thriptera pilipes* Habitus dorsal view

Material examined

Bahr El Gazal, 25. V. 1930, Mabrouk, 1 (MAC); Bahr El Gazal, 28. XII. 1930, Mabrouk, 3 (MAC); El Magara, 5. III. 1997, M. S. Abdel Dayem, 4 (MSAC); G. Asfar, 12. VIII. 1942, Carneri, 3 (ASUC); Kafr Hakim, 4. III. 1931, Alfieri, 1 (ALFC); Kafr Hakim, 15. VIII. 1931, Mabrouk, 6 (MAC); Kerdasa, 8. III. 1931, Mabrouk, 1 (MAC); Kerdasa, 5. IV. 1931, Mabrouk, 3 (MAC); Kerdasa, 1. IV. 1931, Mabrouk, 6 (MAC); Kerdasa, 18. V. 1930, Mabrouk, 1 (MAC); Kerdasa, 11. V. 2004, Neven, 2 (Auth); Kerdasa, 22. VIII. 1931, Mabrouk, 6 (MAC); Kerdasa, 20. IV. 1931, Alfieri, 1 (ALFC); Mansouriah, 25. III. 31, Mabrouk, 1 (MAC); Pyramids, 8. IV. 1931, Mabrouk, 5 (MAC); W. Nabea, III. 1962, 1 (MAC); W. Rashid, 15. I. 1913, Alfieri, 1 (ALFC); West Sinai, 16. IV. 1904, Alfieri, 1 (ALFC).

***Thriptera varvasi* SOLIER, 1836**

Thriptera varvasi SOLIER, 1836: Ann. Soc. Ent. France, 5: 52.

Thriptera debilicornis Kraatz, 1865: Revis. Tenebr.: 299.

Thriptera varvasi; ALFIERI, 1976: Mem. Soc. Ent. Egypt, 5: 186.

Type locality: Algeria: Oran (or Wahran).

Diagnosis

Body: 13-15.5 mm. in length and 7-8.5 mm. in width. Oval, black and covered above with long straight brownish hairs. Habitus figure 3.

Head trapeze form, its length 3mm. and width 3.3mm., with small Tubercles (Fig. 8). Mentum (Fig. 13). Eyes small. Antenna short, moniliform, 3rd segment twice as long as 2nd, 5-10 segments slightly rounded, 11th very small (Figs. 16, 17).

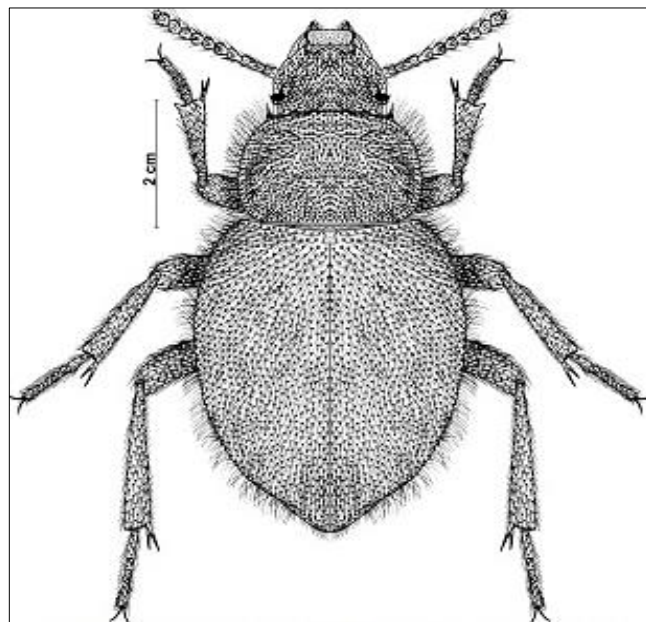


Fig 3: *Thriptera varvasi* Habitus dorsal view

Prothorax transverse, convex, more rounded; disc covered by big rounded tubercles (Fig. 8), anterior and posterior margin slightly straight, angles rounded. Elytra very little depressed at middle, covered by approximate rows, tubercles rather prominent, subconic and very little rather wide in middle of coasts (Fig. 11); Anterior tibia short, little thick and extremity with pronounced triangular dent to outside. Abdomen with very short black hairs and with very remote tubercles.

World distribution: North African species spreads in Algeria, Egypt and Libya.

Local distribution: Abu Nosir: Jorden, 2. XI, El-Henway, 1 (ASUC).

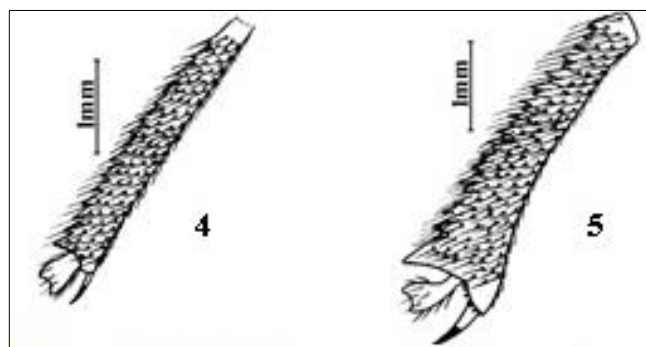


Fig 4-5: Fore tibia of *Thriptera*. 4: *crinata*; 5: *Varvasi*

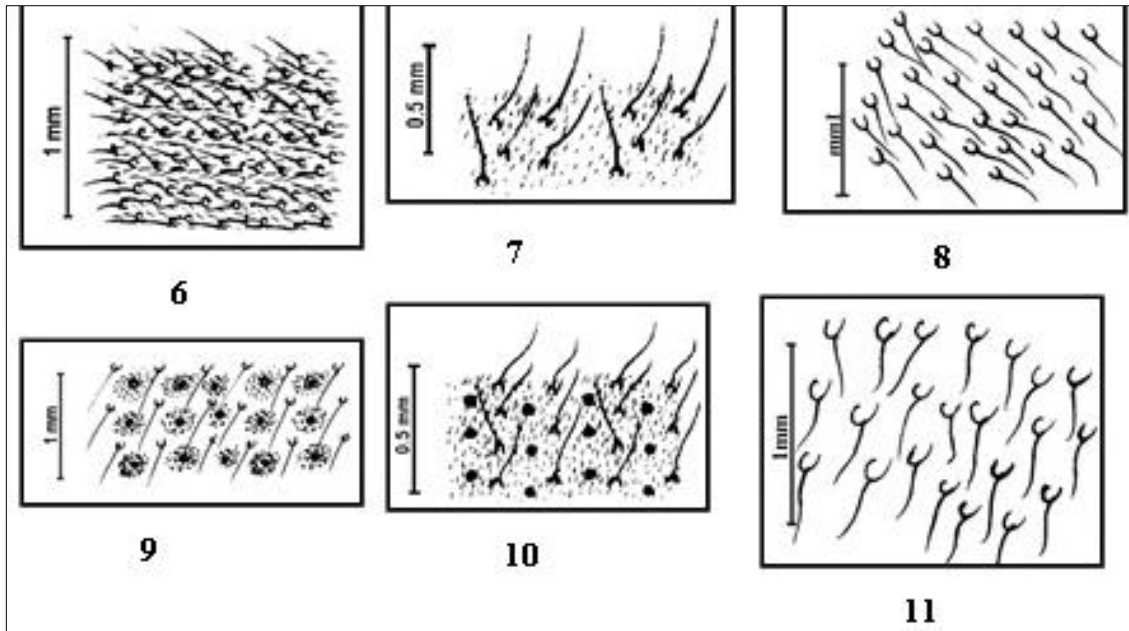


Fig 6-8: Sculpture of head and pronotum of *Thriptera*. 6: *crinata*; 7: *pilipes*; 8: *varvasi*
Fig 9-11: Sculpture of elytra. 9: *crinata*; 10: *pilipes*; 11: *varvasi*

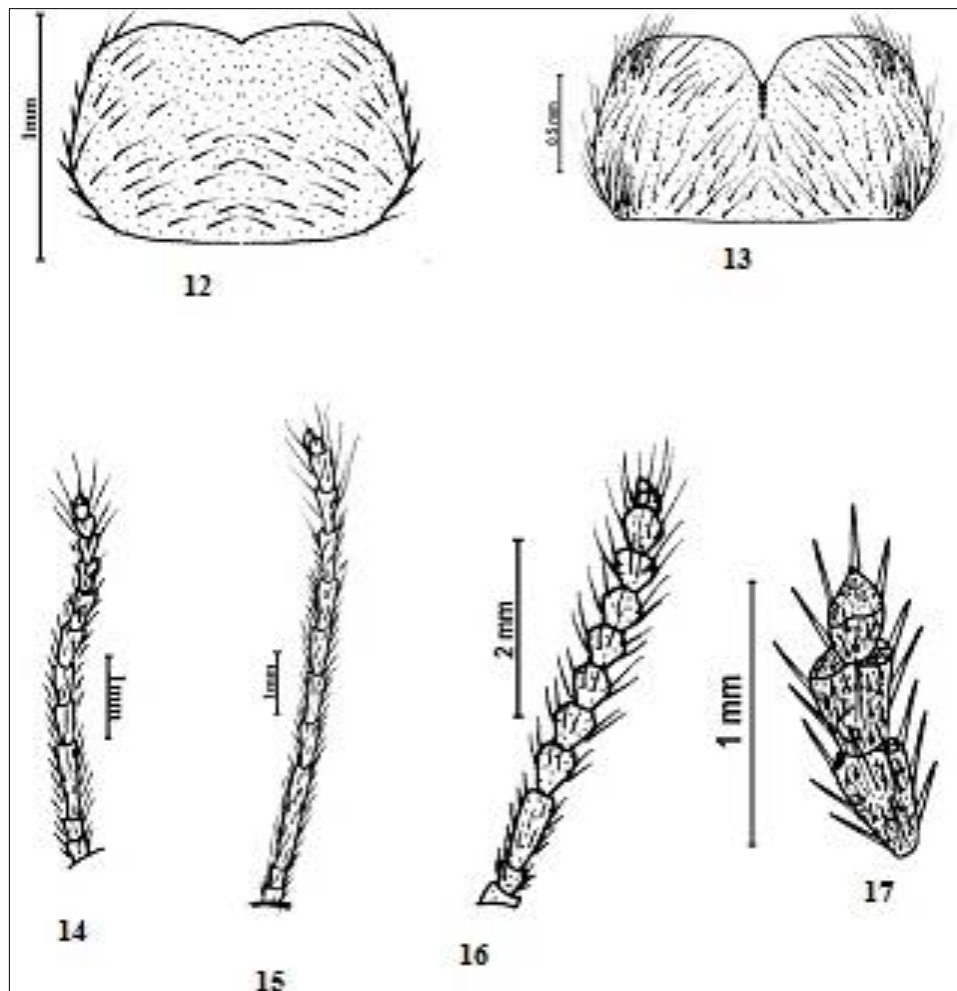


Fig 12-13: Mentum of *Thriptera*. 12: *Crinata*; 13: *Varvasi*.
Fig 14-17: Antenna of *Thriptera*. 14: *Crinata*; 15: *Pilipes*; 16: *Varvasi*; 17: Last three segments

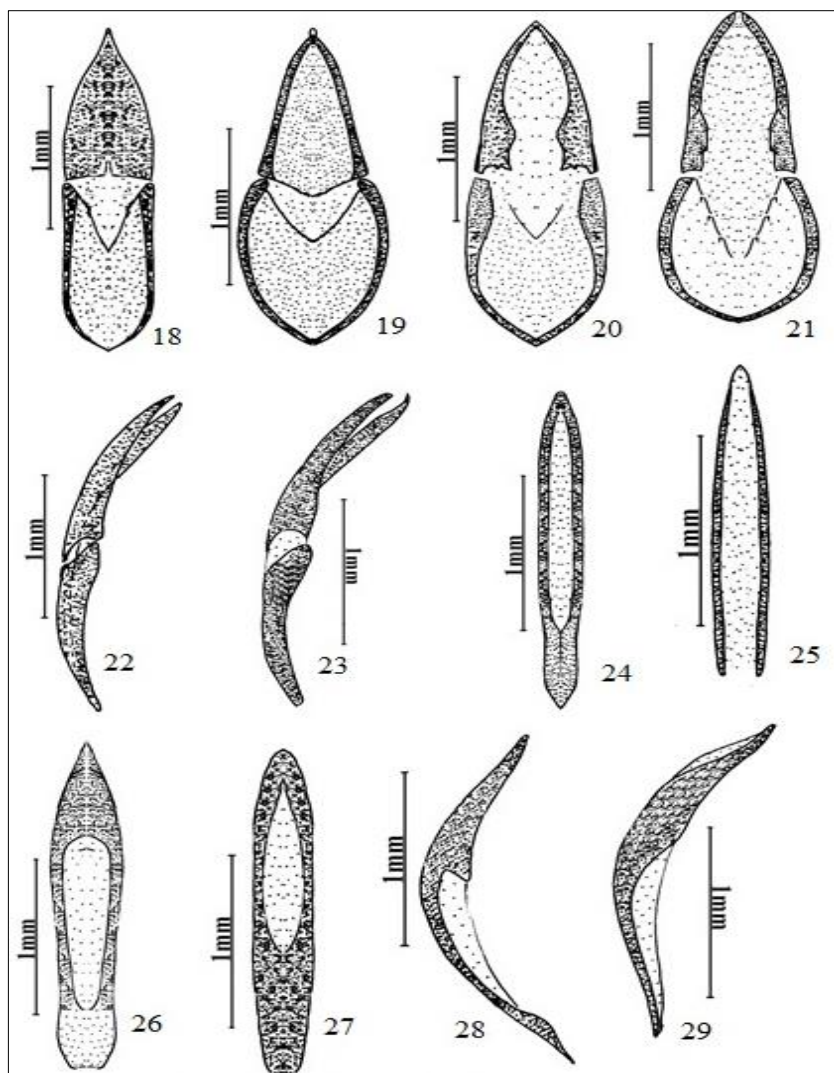


Fig 18-23: Sheath of aedeagus of *Thripetera*; 18: *Crinata* dorsal view; 19: *Pilipes* dorsal view; 20: *Crinata* ventral view; 21: *Pilipes* ventral view; 22: *Crinata* lateral view; 23: *Pilipes* ventral view
Fig 24-29: Aedeagus; 24: *Crinata* dorsal view; 25: *Pilipes* dorsal view; 26: *Crinata* ventral view; 27: *Pilipes* ventral view; 28: *Crinata* lateral view; 29: *Pilipes* lateral view

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