

## CLASSIFICATION OF THE EGYPTIAN *TRIGONOTYLUS* FIEB. (HEMIPTERA: MIRIDAE: MIRINAE)

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### Abstract

The genus *Trigonotylus* is represented alone in Egyptian fauna of the tribe stenodemini (Mirinae). In the present work, all Egyptian species of this genus (*T. pulchellus*, *T. ruficornis*, *T. brevipes*, *T. pallidicornis* and *T. aegyptius*) were described, measured, figured, keyed, given synonyms and geographical distribution. The last species was described for the first time as a new species.

### INTRODUCTION

Stenodemini is a widely distributed tribe of the sub family Mirinae comprising about 25 genera in the world (Schuh & Slater 1995).

In Egypt; stenodemini is represented by one genus, *Trigonotylus*, and four species *T. Pulchellus*, *T. ruficornis*, *T. brevipes* and *T. allidicornis* (Priesner & Alfieri, 1953 and Linnavouri, 1964).

*Trigonotylus brevipes* is common all the year in the Egyptian fauna on Graminae (grasses, cereals as wheat and maize), *Trifolium alexandrium*, *Phaseolus* sp., *Vicia faba* and others (Priesner & Alfieri, 1953). On the other hand Wheeler & Henry, (1985) mentioned that *T. coelestialium* is known as a pest small grain cereals in the Palaearctic Region and it causes a potential damage in cereal oat fields in Pennsylvania. Five species of this genus are common in China cereal fields (Zheng 1985).

Before the present investigation, little information was available about Egyptian fauna of the genus *Trigonotylus* (Priesner & Alfieri, 1953 and Linnavouri, 1964). The aim of the present work is to add some faunistic and taxonomic knowledge concerning this taxa in Egypt.

**Key words:** Classification, Distribution, Miridae, *Trigonotylus*.

## MATERIALS AND METHODS

The specimens examined during this investigation consisted of these deposited in the reference collection of Ministry of Agriculture, Cairo University, Ain shams University, Alfieri collection at Al Azhar University; Collection of the Entomological Society of Egypt and specimens collected by authors from different localities all over Egypt.

Collected material was identified through reference collection and published keys (Priesner & Alfieri, 1953; Carvalho 1955, 1957, 1958 a, b 1959, 1960; Linnavouri 1964; Wagner 1971; Froeschner 1981, 1985; Schuh & Slater 1995).

The taxonomic characters and terminology were summarized through this investigation according to (Schuh & Slater 1995; El-Sebaey 2003).

## RESULTS AND DISCUSSION

### **Genus *Trigonotylus* Fieber**

Genus *Trigonotylus* Fieb. 1858

Genus *Callimiris* Reut. 1875

Genus *Trigonotylus* Priesner & Alfieri 1953

Genus *Trigonotylus* Carvalho & Wagner 1957

Genus *Trigonotylus* Linnavouri 1964

Genus *Trigonotylus* Froeschner 1981 & 1985

Genus *Trigonotylus* Wheeler & Henry 1985

Genus *Trigonotylus* Zheng 1985.

The members of *Trigonotylus* are recognizable by the slender pale-coloured bodies; head with median longitudinal sulcus; compound eyes small and rounded; Labium three-segmented; antenna four-segmented, first segment with suberect hairs, hairs less than half as long as diameters of antennal segment I.; pronotum without complete anterior ring-like thickening, lateral margin attaining fore angle; legs slender in form, posterior tarsus with first segment longer than lengths of second and

third segments combined; hemelytron plae coloured; abdomen elongate; male genitalia (Fig. 1,B); pygophore oval, median process of pygophore warm shaped, parameres with tapering end

**Key to the species of the genus *Trigonotylus* in Egypt**

1. Pronotum with sculptures; hind tibia punctuated; corium with sparce pubcent hairs, Fig. 1 ..... *T. Pallidicornis*  
 - Pronotum without sculptures; hind tibia unpunctuated; corium without sparce hairs ..... 2
2. Pronotum and scutellum elevated proximally, hind tibia equal one half of body length; membrane leathary ..... *T. ruficornis*  
 - Pronotum and scutellum without elevation, hind tibia less than half of body length; membrane transparent ..... *T. ruficornis*
3. Venteral femora with longitudinal red band; clavus outer margins red and outer margin grey; medial ficture equal embolium length, Fig. 3 ... ..... *T. pulchellus*  
 - Venteral femora without band, clavus margins pale coloured, medial fricture less than embolium length..... 4
4. Pronotum with two distinct sulci and distal margin concave; fore tibia provided with spines; clavus without hairs, cuneus margins brown, Fig. 4 ..... *T. brevipes*  
 - Pronotum without sulci and distal margin little curved; fore-tibia without spines; clavus with short sparce hairs; cuneus margins pale coloured, Fig. 5. .... *T. aegyptius* nov. spec.

**1. *Trigonotylus pallidicornis* Reut.**

*Trigonotylus pallidicornis* Reut. 1899 (Quated from Oshanin 1912)

*Trigonotylus pallidicornis* Linnavouri 1964

Body testaceous, 4.5 mm. in length. Head triangular; labrum extended to first labial segment; labium extended to mid coxa, first and last segments globular, distal half of last segment black, terminated with small spine; last segment equal to second one in length; compound eyes black; antennal first segment (0.52 mm) approximately as long as two third of the second segment (0.75) mm; last segment half as long as second one (0.38 mm). Pronotum with two pairs of sculptures proximally and longitudinal band medially, lateral end terminated with sclerites; median sulcus with

white longitudinal band, Fig. 1. Legs: provided with short erected hairs; fore-tibia dilated distally; in fore and mid tarsi first segment equal last segment (0.38 mm.); hind tibia punctuated (1.5 mm.) as long as one third of body length; last tarsal segment equal first two segment length (0.38 mm.). Hemeleytron with sparse pubescent hairs on clavus; medial fructure half as long as embolium length; corium with sparse pubescent hairs; cuneus elongate, L shaped, Fig. 1. Abdomen testaceous, tubular in shape; male genitalia, Fig. 1, B pygophore oval shaped; median process of pygophore worm shaped; parameres with tapering end.

**Distribution in Egypt:** Cairo, Fayoum, Meadi, Canal Zone, Upper Egypt, Giza. It collected from clover, wheat and grasses.

### 2. *Trigonotylus ruficornis* Geo.

- *Trigonotylus ruficornis* (Geoffr.) 1758 [Quated from Oshanin 1912].
- *Trigonotylus ruficornis* Priesner & Alfieri 1953.
- *Trigonotylus ruficornis* EL-Moursy & Mohamed 1996.

Body stramineous in colour, 5.25 mm in length. Head yellowish; compound eyes yellowish black; labrum, with biforcting end, extcnded to first labium segment; labium extended to fore-coxa; antenna brownish, first segment (0.75 mm.) globular with short hairs, second segment (1.88 mm.). *Pronotum*: browish yellow, elevated, with longitudinal band medially; scutellum with two elevations in front of sulcus. *Legs*: yellowish red; in fore and mid tarsai first segment (0.23 mm and 0.075 mm; respectively) equal second segment; hind tibia (2.63 mm.) as long as one half of body length., first tarsal segment (0.38 mm) equal last two segments combined in hind tarsi. Hemelytron stramineous; clavus grey; medial fructure (1.88 mm.) equal four fifth embolium length (2.25 mm.); cuneus triangle in form, membranous more leathary, Fig. 2. Abdomen yellowish, oval in form.

**Distribution in Egypt:** Sinai, Giza. It collected from grass.

### 3. *Trigonotylus pulchellus* Hahn

- *Trigonotylus pulchellus* Hahn 1834 (Quated from Oshanin 1912)
- *Trigonotylus pulchellus* Priesner & Alfieri 1953.

Body yellowish red with 4.13 mm length. Head yellowish red, with three red or brown longitudinal bands; clypes protruded, compound eyes black, antenna red, first segment globular (0.45 mm.) with dense short erected hairs and a yellow longitudinal band, equal one third of second segment length; second segment equal third segment length (1.43 mm), last segment with tapering end; labrum short extended to proximal of first labium segment; labium extended to fore-coxa. Pronotum yellow with three longitudinal reddish bands; scutellum with two red longitudinal band. Legs: yellowish red; coxae yellow with red sculptures; femora yellow with longitudinal red band ventrally; tibiae with short sparse spine; in fore and mid. tarsi, first segment equal last segment (2.25 mm.); hind tibia (1.65 mm.) reddish distally, less than half of body length, in hind tarsi, first segment (0.25 mm) equal last two segments combined. Hemelytron: grey, reddish; clavus outer margin red, inner margin grey; medial fracture equal embolium length (1.65 mm); corium and R + M reddish; cuneus small with grey margin and narrow. Abdomen tube shaped; dorsum red; ventrum yellow with red margin

Fig. (1) *T. pallidicornis*

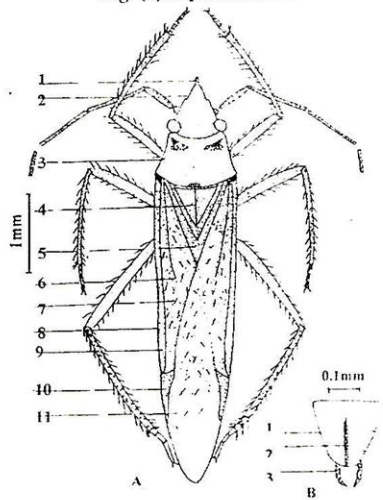


Fig. (2) *T. ruficornis*

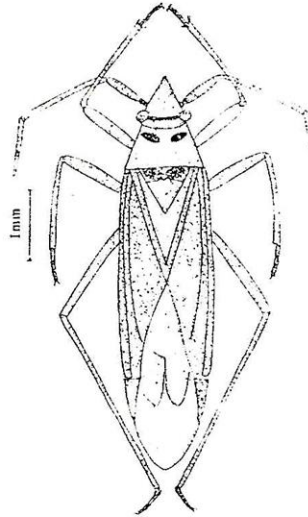


Fig. 3 *T. pulchellus*

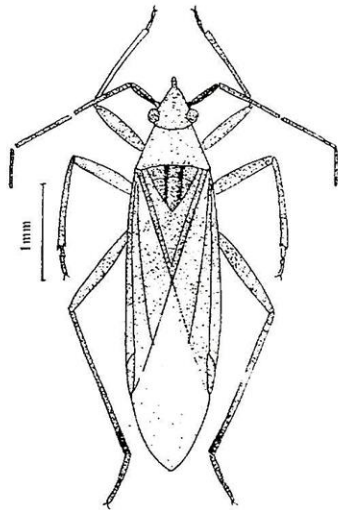


Fig. 4 *T. brevipis*

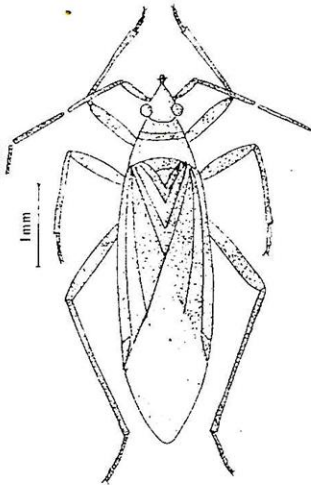


Fig. 5 *T. aegyptius*

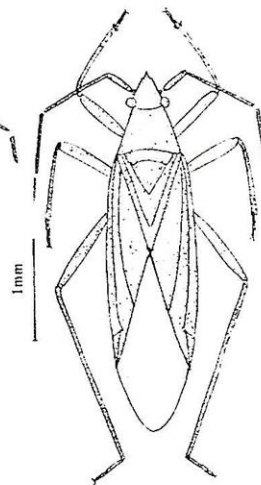


Fig. 1, A

- 1- Clypeus      2- Head      3- Pronotum
- 4- Scutellum   5- Clavus    6- Medial fracutre
- 7- Corium      8- Embolium   9- R+M
- 10- Cuneus    11- Membrane

Fig. 1, B

- 1- Pygophore
- 2- Median process of pygophore
- 3- Parameres



**Distribution in Egypt:** Sinai, Matrouh. It collected from grasses.

**4. *Trigonotylus brevipes* Jak.**

- *Trigonotylus brevipes* Jak. 1880 (Quated from Oshanin 1912).
- *Trigonotylus tenuis* Peut. 1893 (Quated from Oshanin 1912).
- *Trigonotylus brevipes* Priesner & Alfieri 1953.
- *Trigonotylus brevipes* EL-Moursy & Mohmed 1996.

Body bright testaceous with length 4.5 mm. Head: Compound eyes brown ventrally and yellow dorsally; antennal first segment (0.45 mm.) equal one half of second segment (0.9 mm.); second segment equal third segment length; labrum brown coloured with spine form, extended to second labium segment; labium extended to mid coxa. Pronotum with two distinct sulcus, distal margin concave; scutellum trapezoid proximally, tip black Fig. 4. Legs: slender, shorter than other species; fore tibia dilated distally, provided with 6 spines; in fore and mid tarsus, first segment (0.15 mm) equal last two segment; hind tibiae (1.8 mm.) equal two fifth of body length (4.5 mm.); hind tarsus red, first segment (0.38 mm.) equal last two segment (0.23 mm. and 0.15 mm. respectively). Hemelytron testaceous, medial fructure less than embolium length; cuneus triangle form, small, with brown margin Fig. 4. Abdomen testaceous, tube shaped.

**Distribution in Egypt:** it is common species, recorded all over Egypt on grass, wheat, maiza, been and clover.

**5. *Trigonotylus aegyptius* nov. spec.**

body testaceous length 2.78 mm. . head yellowish, compound eyes black with silver facets; antennal second segment (1.13 mm.), 2.5 times as long as first segment (0.45 mm), first segment length equal one half of third segment (0.9 mm); labrum extended to end of first labium segment; labium extended to mid coxa; last segment black distally, terminated with short spine, Fig. 5. Pronotum yellowish with small sculptures; lateral margin straight and bright; scutellum elevated proximally with black end. Leg yellowish, coxa small; in fore and mid legs first segment (0.15 mm) equal last segment; hind tibia (1.5 mm.), reddish proximally, more than half of body length; hind tarsi reddish, first segment (0.3 mm.) equal two times of last two segments

combined (0.75 mm.). Hemelytron yellowish; clavus with sparse short hairs; medial fructure less than embolium length; cuneus small and transparent Fig. 5; membranous part without cells. Abdomen yellowish, slender, tube shaped.

**Distribution in Egypt:** This taxa is a new species, it was secured from Aswan and collected from grasses.

One female (holotype), Egypt, Aswan, 30 1 20002, Iman EL-Sebaey  
(Collection of the Ministry of Agricultur.

Two males and one female (paratype), Egypt, Aswan, 30 1 2002, Iman EL-Sebaey (collection of the Ministry of Agriculture.



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تصنيف جنس *Trigonotylus* Fieb بمصر  
(رتبة نصفية الأجنحة – فصيلة ميردى – تحت فصيلة ميرنى)

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تم حصر جميع أنواع جنس *Trigonotylus* لأول مرة بالفونا المصرية ودراستها تقسيمياً. تم تسجيل خمسة أنواع هي *T. pulchellus* ، *T. Ruficornis* ، *T. brevipes* ، *T. pallidicornis* ، *T. aegyptius* . تم عمل مفتاح تصنيفى لأنواع الجنس مع قياس أجزاء الحشرة المختلفة ووصف كامل لكل نوع مع الرسم التوضيحي لها بالإضافة لإعطاء مرادفات الأسماء لهذه الأنواع وتم تسجيل النوع الأخير ووصفه كنوع جديد لأول مرة من مصر.