

Taxonomic revision of tribe Palorini (Coleoptera: Tenebrionidae: Tenebrioninae) from Egypt

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Abstract

Tribe Palorini is represented in the world by 12 genera; It's represented in Egyptian fauna by one genus (*Palorus*) belonging to 3 species. The species of tribe Palorini with different sizes, colors, and lifestyles is vital to the functioning of each environment inhabits. Their extraordinary capacity to live in a wide range of environmental circumstances is highlighted by their adaptations to varied environments, which span from forests to deserts. Adult Palous beetles eat both fresh and decaying vegetation, including vegetable produce, and some species are commercially important pests of flour and other cereal products. The larvae of Palous beetles are cylindrical to slightly flattened, with a heavily sclerotized head and all visible tergites or only the head and abdominal apex.

A key to species is presented to facilitate recognition the species. A diagnosis of tribe and genus, full description for species and illustration of taxonomic character are involved.

Keywords: Coleoptera, Tenebrionidae, Tenebrioninae, Palorini, palorus, Classification, key, Egypt

Introduction

The tribe Palorini are all small beetles, contains robust, mid-sized beetles that are typically black, dark brown, or grey with a satiny sheen; The body shape is similar to a medication capsule or a bullet, and the legs can be short and stout or long and spindly. Some species known as pests' food. The morphological characters of each species are mainly based on both sexes. The majority live under the bark of trees or in the galleries of wood-boring beetles but two species, *Palorus subdepressus* (Wollaston) and *Palorus ratzeburgii* (Wissmann) are commonly found in stored products; *Palorus ficicola* (Wollaston) are less frequently. The taxonomic hierarchy, synonyms and distribution, obtained from Lillig and Pavlicek 2003; Löbl *et al* 2008; Vitalii I. Alekseev and Maxim Nabozhenko 2017; and Bouchard, Patrice *et al* 2021.

Material and method

The current study is based on an analysis of all specimens that were occasionally captured in various parts of Egypt using pitfall traps, light traps, or sweeping nets, in addition to the conserved specimens in Egypt's four primary insect collections:

Ain Shams University Collection, Entomology Department, Faculty of Science [ASUC]; Alfieri collection, Entomology Department, Faculty of Science, Al-Azhar University [ALFC]; Cairo University Collection, Entomology Department, Faculty of Science [CUC]; and the collections held by the Plant Protection Research Institute Ministry of Agriculture (Egyptian Reference Museum of insects).

Results

Tribe Palorini Matthews, 2003

Diagnostic character

Mandible bidentate; labrum prominent, sub-quadrate, with short and wide tromal arms which have no extensions; antennal segments usually cylindrical and compressed, with weak 5-segmented club, and simple sensilla only; eye usually small and rounded. Pronotum often with lateral longitudinal grooves or depressions. Procoxal cavities

closed externally and closed internally except in *Ulomotypus*. Scutellum transverse triangle. elytra with nine striae (rarely 10) and scutellary striae; epipleura not complete to elytral apex; leg not fossorial. Abdomen with visible membrane between last three ventrites.

Genus *Palorus* Mulsant, 1854

Palorus Mulsant, 1854: 250.

Caenocorse Thoms., 1859: 117

Circomus Fleis., 1900: 236.

Eba Pascoe, 1863: 129.

Platyotus Gersta., 1871:62

Type species: *Hypophloeus depressus* Fabricius, 1790: 223.

Diagnosis

Body flat depressed. Head transverse, with transverse furrow separate epistome and frons, simply punctated; labrum rounded anteriorly and weakly appear; epistome hardly emarginated forward; eyes rounded and clearly convex; antennae setosed, weakly wide toward apex, not reach to pronotal basis. Pronotum transverse, marginated entirely, straight laterally, rounded forward with obtuse anterior angles hardly emarginated basally with sharp posterior angles. Elytra subparallel, rounded at apex, with punctated stria; epipleura narrow and reach to apex.

Key to species of genus *Palorus*

- Epistome with deep transverse depression reach to inner margin of eyes.....*subdepressus*
- Epistome with two clear dimples reduced and ended before inner margin of eyes..... 2
- Pronotum straight before posterior angles laterally, anterior angles rounded;
antenna long and reach to middle of pronotum.
..... *ratzeburgii*
- Pronotum arched before posterior angles laterally, anterior angles obtuse;
antenna short and hardly or not reach to middle of pronotum..... *ficicola*

***Palorus ficicola* (Wollaston, 1867)**

(Fig. 1-3)

Hypophloeus ficicola Wollaston, 1867: 205.

Caenocorse deserticola Sahlb., 1913: 51.

Palorus subfilum Fleisch., 1900: 237.

Description

This species is very related to *Palorus ratzeburgii* but differ in: body elongate; yellow-brown to red-brown, moderately shining to dull; micro-reticulation distinct. Head. Genae slightly rounded, not produced anteriorly; clypeus raised medially, punctured as genae; vertex almost flat, usually with a small apical depression; dorsal length of eye normally greater than breadth of scutellum, supra-orbital carina distinct. antenna short and hardly or not reach to middle of pronotum. pronotum arched before posterior angles laterally, anterior angles obtuse; punctures of disc small, separated by 2-3 diameters, towards sides larger and denser; moderately depressed. Elytra Parallel-sided; interstices with single rows of punctures; scutellary striae ill-defined and variable, represented by 4-7 punctures.

Distribution

World: Cosmopolitan.

Local: this species is distributed in Lower Nile Valley, Upper Nile Valley, Coastal strip and Eastern desert.

Material examined

Shoubra.6. Alfieri (4); Qubba Palais.4.1910, Alfieri (1)..... {ALFC}

Nagi Hamadi.8.1917; Asyut.11.1917; Cairo 1919; Zenein (Giza).1.1928; Khatatba.4.1934; Ezbet EL-Nakhl.6.1934..... {MAC}

***Palorus ratzeburgii* (Wissmann,1848)**

(Fig. 4-8)

Hypophloeus ratzeburgii Wissm.,1848: 77

Hypophloeus ambiguus Woll., 1857: 152.

Hypophloeus floricola Mars., 1876: 115.

Caenocorse galilaeus Sahlb., 1913: 49.

Description

Body about 2 – 2.8 mm. in length, reddish brown, bald; micro-reticulation distinct. Head transverse, sparsely punctated; genae not raised, epistome with two deep and wide dimples; eyes rounded and prominent; antennae setosed, often reach to middle of pronotum, antennal segments transverse and widened toward apex. Pronotum

transverse, convex, marginated, rounded forward with rounded anterior angles, straight laterally, weakly sinuated basally with sharp posterior angles, pronotum sparsely separated by 1-2 diameters punctated dorsally. Elytra subparallel, shoulders angled, apex rounded, with punctated-striae represented by five or less, ill-defined punctures, intervals of elytra with fine single and flat punctated rows; legs simple.

Distribution

World: Cosmopolitan.

Local: this species is distributed in Lower Nile Valley,

Material examined

Cairo 9.10.1953, Aly (2). {ASUC}

***Palorus subdepressus* (Wollaston, 1864)**

(Fig. 9-11)

Hypophloeus subdepressus Woll., 1864: 499

Palorus bifoveolatus Baudi, 1876: 235.

Description

Body about 2.2 – 2.6 mm. in length, ferruginous red, shiny, linear and subdepressed. Head with slightly dense punctation, epistome with deep transverse depression reach to inner margin of eyes, lateral margin of epistome nearly cover eyes; antennae short. Pronotum transverse, marginated, convex, with rounded anterior angles and sharp posterior angles, sparsely punctated dorsally. Scutellum short and transverse triangular. Elytra subparallel, rounded at apex, angled at shoulders, with punctated striae, intervals with one row of very fine punctation.

Distribution

World: Cosmopolitan.

Local: this species is distributed in Lower Nile Valley, Upper Nile Valley and Coastal strip.

Material examined

Shoubra 10.6.1908, Ferrante (1); Alexandria 11.9.1910, Ferrante (2); Cairo 17.3.1897, Ferrante (2); Barrage 14.1.1901, Ferrante; Maadi 11.11.1910.... {CUC}

Ferrante (4); Hammam.8.1908, Ferrante (5); Beni Mazar (Minia)27.5.1915, Ferrante (1); Shoubra.8. Chakour (1); Alexandria 13.4.1911, Ferrante (1); Shoubra 30.10.1914, Ferrante (1) {ASUC}

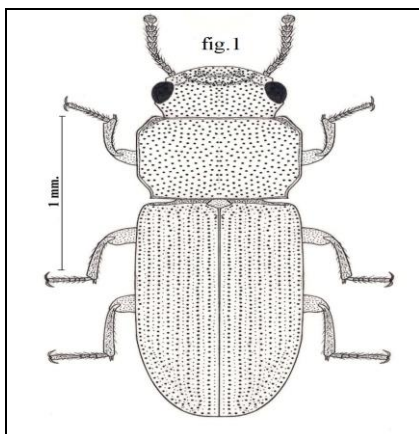


Fig 1: Habitus of *Palorus ficicola*.

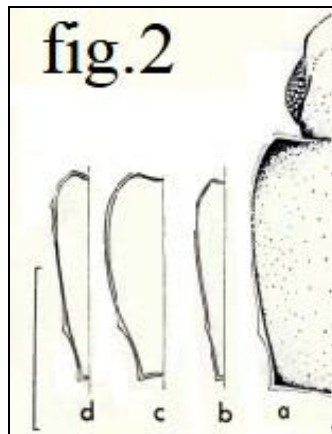


Fig 2: lateral margin of pronotum *P. ficicola*.

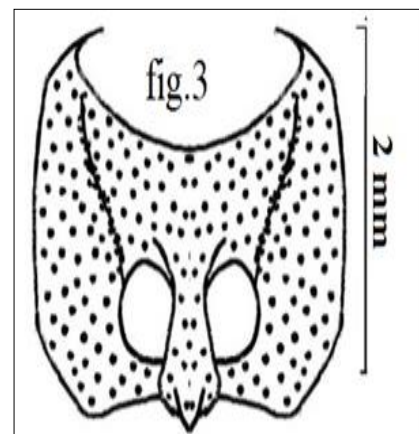


Fig 3: Prosternal process of *P. ficicola*

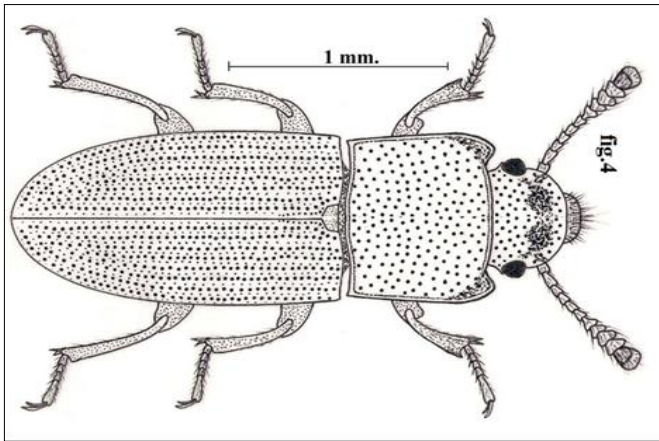


Fig 4: Habitus of *Palorus ratzeburgii*.

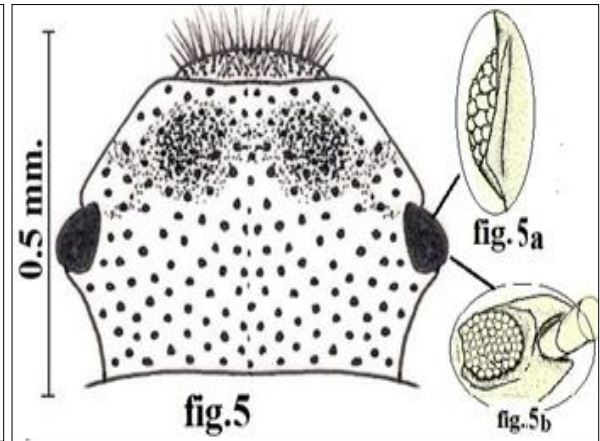


Fig 5: Head of *Palorus ratzeburgii*. Fig 5b: Eye lateral view.

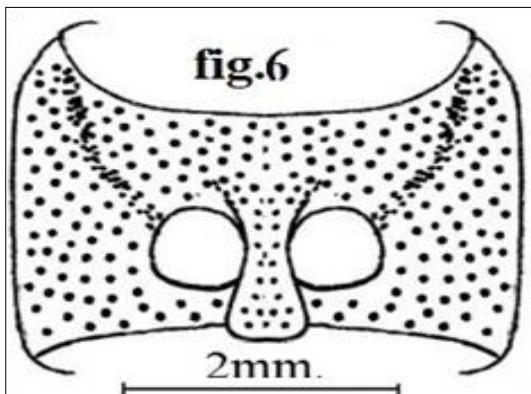


Fig 6: Prosternal process of *Palorus ratzeburgii*.

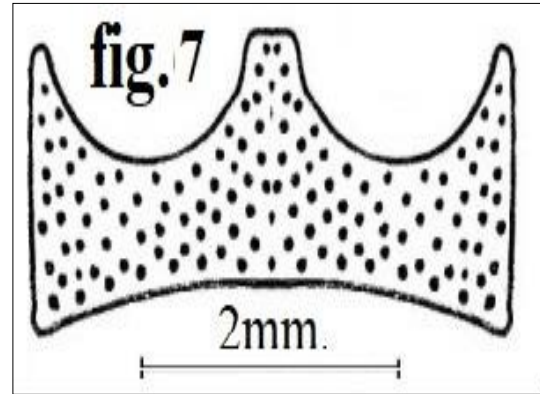


Fig 7: Frist abdominal strnrite of *Palorus ratzeburgii*

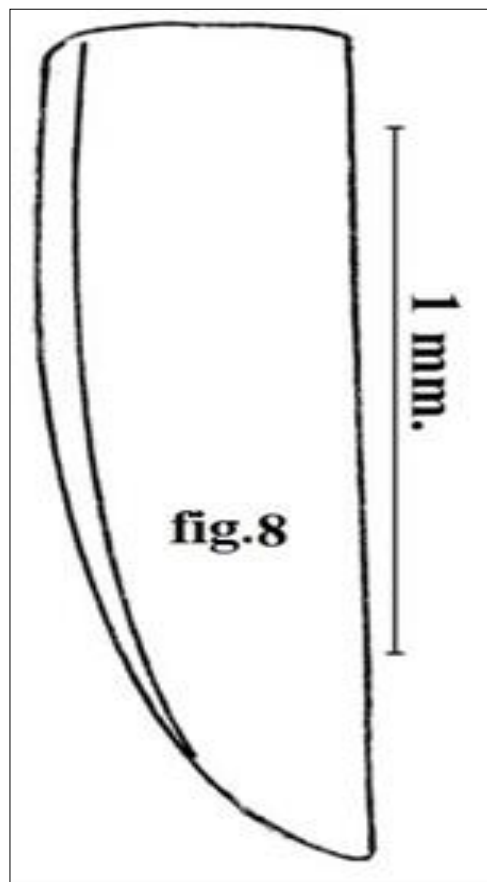


Fig 8: *Epipleura of elytra.*

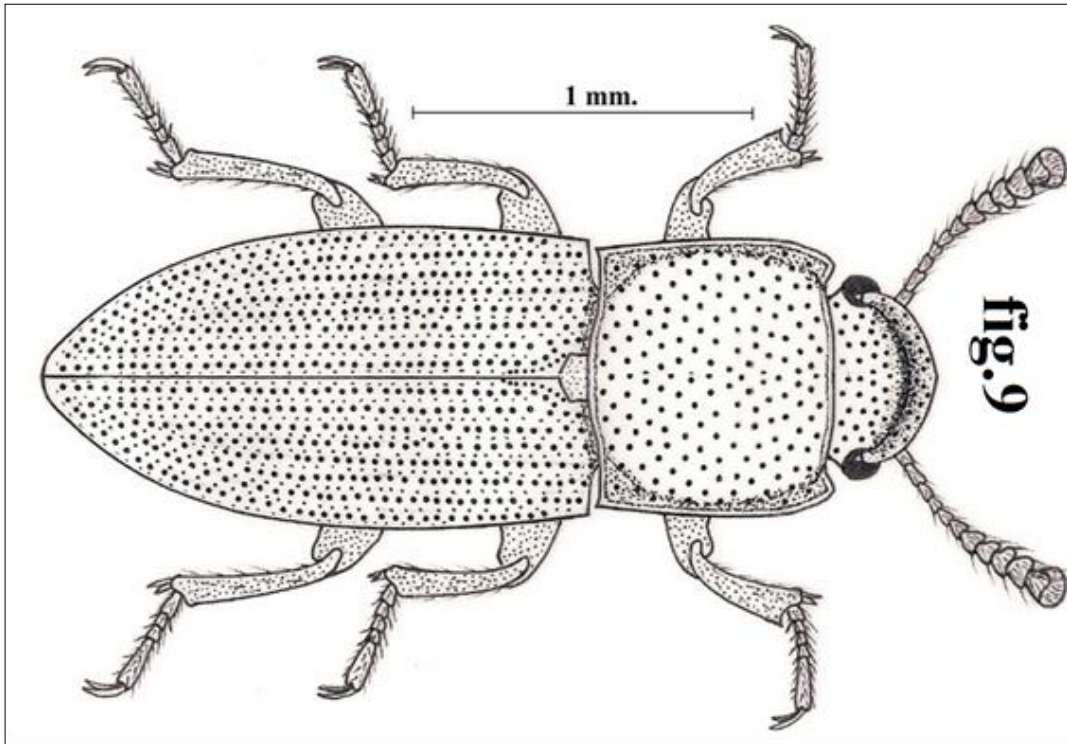


Fig 9: Habitus of *Palorus subdepressus*.

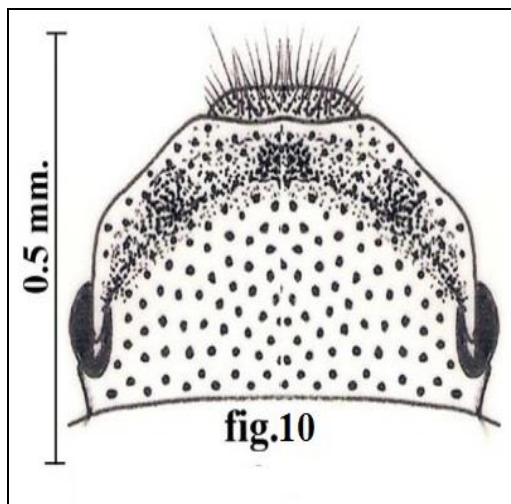


Fig 10: Head of *Palorus subdepressus*.

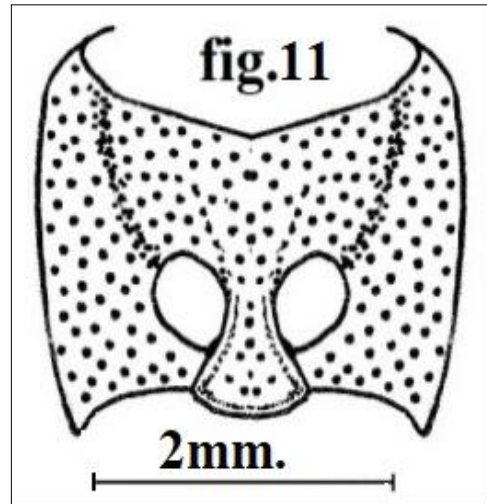
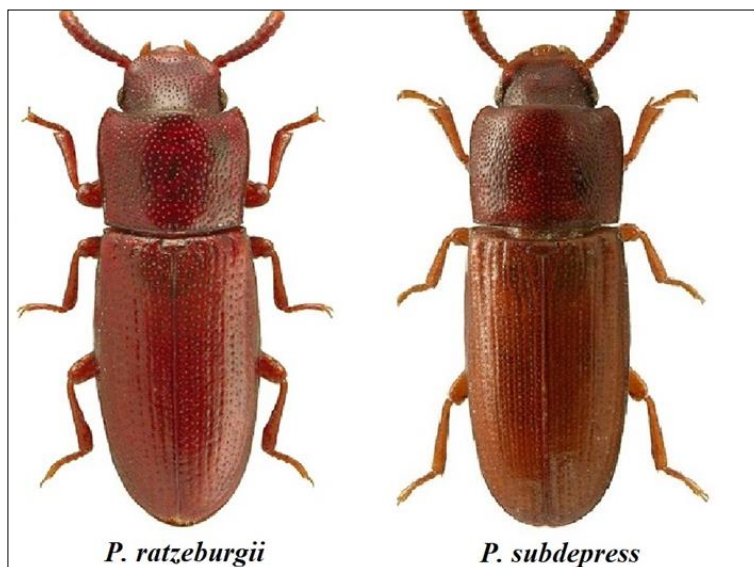


Fig 11: Prosternal process of *Palorus subdepressus*.



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