

**RE- DESCRIPTION OF THE NEW SPECIES FOR IRAQ, *Asiopertha nazarena* MARSEUL, 1878 (COLEOPTERA: SCARABAEIDAE, RUTELINAE) FROM KURDISTAN REGION OF IRAQ**

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**ABSTRACT**

Depending on specimens deposited in the Insect Museum- Directorate of Agriculture Researches, Ministry of Agriculture & Water Resources- Kurdistan Region- Erbil- Iraq , a re- description of the new species for Iraq, *Asiopertha nazarena* Marseul, 1878 (Coleoptera: Scarabaeidae) was done. A detailed description of adults were presented and the important body parts such as mouthparts, antenna and male genitalia were photographed. All dates and collection locations were mentioned.

**KEY WORDS:** Coleoptera, Scarabaeidae, Rutelinae, *Asiopertha nazarena* Marseul, 1878, Kurdistan Region of Iraq

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**INTRODUCTION**

Scarabaeidae, is a large Coleopteran family, with about 35,000 species (Ratcliffe and Cave, 2008). Latreille, 1802 was the first who named it. Based on some external differences like the mandibles, antennae and the number of the setae on the hind- tibia and formulated a taxonomic key to its subfamilies , Borror *et al.*, (1981) divided it into 14 subfamilies , mentioning that some of scarabs may attack crops, forests and lawns.

Species of the genus *Asiopertha* Rtt., 1903 (Rutelinae: Anomalini) with antennae nine segmented; Apex of elytra with a membranous edge; Clypeus not expanded; Fore- tarsi of males thick, the last segment with a protuberance near the base, for- tibiae with two teeth on the outer edge and with a spur internal apical; Large claw of middle and anterior tarsi divergent in both sexes; Parameres thick as long as the drum, flattened above and strongly widened laterally before the apex, ventral plate well-sclerotized, tapered in its distal part and bearing a small point before the apex between the bases of the parameres, penis with or without apical sclerites, the genus comprises three species: two

from Asia Minor and the Near East, the third of the Caucasus which is the *Asiopertha mlokosiewiczi* Zaitzev (Baraud, 1992).

Baraud (1992) formulated a key to distinguishing to distinguishing the genera of the tribe Anomalini including the *Asiopertha* depending on their aedeagus and the parameres. Zorn (2005) commented on the *Asiopertha fulvicornis* (Burmeister, 1855) and mentioned that Burmeister (1855) described this species as *Anomala* Leach, 1819, but examination of the type material showed that this taxon is in fact an *Asiopertha* Medvedev, 1949 and very similar to *Asiopertha ganglbaueri* (Reitter, 1885). Löbl and Löbl (2016) published a catalogue of Palaearctic coleopteran including three species belong to the *Asiopertha* Machatschke, 1957 and verified the occurrence of the *Asiopertha nazarena* in Israel and Turkey. Furthermore, Koçak and Kemal (2009) synonymized the genus *Asiopertha* with the *Blitopertha* and verified the occurrence of the *Asiopertha nazarena* in Turkey relying on the Info- system of the Cesa. Bunalski *et al.*, (2014) have investigated the fauna of Scarabaeoidea in Golestan province, Northern Iran, in total 19 species within 16 genera including the two

species *Asiopertha ganglbauberi* and *A. nazarena* were found and recorded.

In Iraq, there isn't any taxonomic study about this species, or its genus.

This study attempts to provide a re-description of *Asiopertha nazarena* Marseul, 1878 in detail with photographs of the important parts.

## MATERIAL AND METHODS

The data and material of the study depended on 12 specimens of *Asiopertha nazarena* which were preserved in the Insect Museum- Erbil- Directorate of Agriculture Researches- Ministry of Agriculture & Water Resources- Kurdistan Region- Iraq. The procedures of data collection were as follows:

Ainkawa: 4/4/1999, 1♂, Ainkawa, 18/6/1999, 1♂2♀

Qushtappa: 1/5/2000, 1♂

Bnaslawa: 10/6/2001, 2♂1♀

Shamamk: 15/6/2002, 1♂1♀

Gerbish: 15/6/2004, 2♀

The study of the morphology of the adults were done through dissecting microscope, while the minute parts were studied by the preparation of microscopic slide, via placing them in a beaker sizing 100ml which contains 50ml water and warming it to boiling point on a calm fire to soften their parts, then the required parts put in a beaker sizing 100ml and contains 50ml water including KOH 10% and placed on a calm fire again with shaking for about ten minutes to dissolve the lipids of the body and destroy the muscles. After that the pieces were put in distilled water for 5 minutes twice in order to reduce the effect of the alkali. Mouthparts and abdomen, on the other hand, were put in ethyl alcohol 25% and then dissected through two fine pins under dissecting microscope to obtain the different parts, then transferred them to ethyl alcohol 50%, then 75% and then 100% for two minutes for each concentrations for dehydration of water, then placed in xylol for two minutes, for translucency, then the

prepared slides of each part through some drops of Canada balsam and covered with a cover- slide for examination under binocular dissecting microscope, a digital computerized microscopic camera (AmScope10 megapixel) was utilized for photographing the important parts.

## RESULTS AND DISCUSSION

### BODY (Pics. 1a, b)

The body is robust, big sized, with elongate-oval shape, convex dorsally, plain ventrally, black colored but elytra with scattered yellowish brown spots, weak metallic shine, about 13.1-14.2 mm long and 7.8- 8.1 mm wide.

### HEAD (Pics. 2a, b, c, d and e)

The head is stout, has nearly an oval shape without distinct neck, with scattered yellow hairs, black colored, about 2.2- 2.4 mm long, 2.4- 2.6 mm wide, retracted into the anterior prothorax cavity; clypeus big and thinned, its apex is rounded, recurved and simple; vertex convex; antenna (Pic.2a) lamellate, arising beneath a small frontal ridge, nearly covering the mandibles, with nine segments, the scape is big and nearly triangular shaped, the pedicel is smaller than the scape, the other two segments are alike, the 5th has the same size as the two preceding segments collectively, the 6th is very small and thin, the last three segments are glabrous, elongate, leaf- shaped and each of about 2.1- 2.2 mm long, brown colored; compound eyes large sized, oval shaped; mouthparts displayed chewing prognathous type; labrum (Pic. 2b), sclerotized, elongate transversally, apically weakly emarginated, brown colored, sitose particularly on the concave distal edge and attached by the small membranous, hairy, yellowish brown colored, attached with epipharynx in its lower margin and located under the clypeus; mandible (Pic. 2c) small, semi- rectangular, stout, very hardened, arcuated, its outer margin is convex brown colored, incisus sclerotized with cutting edge, lacinia mobilis densely tapered and haired; mola sclerotized, squire shaped; maxilla (Pic. 2d) small, brown colored, cardo triangular shaped, articulated broadly with a triangular stipes which is covered with long yellow hairs on outer margin of the upper half and with attaching a conic lacinia in its inner margin; galea strongly

hooked with six long black teeth at the tip, 4-segmented palpi attaching the latero- distal margin of the stipes which is stout and brown colored, the 1st joint is the smallest, the 4th joint is elongate oval and the longest; labium (Pic. 2e) brown colored, consists of a semi- rectangular submentum, nearly ovoid mentum, prementum which the laterally 3- segmented labial palps is attached with and which the 3<sup>rd</sup> segment is the longest and the distal part deeply bisinuate ligula which fringed with long distal setae.

#### **THORAX**

The pronotum is big, broad, nearly as wide as the elytra, covered with scattered short yellow hairs, with rough punctation at the side but none at the hind angles, 3.1- 3.3 mm and long, 4.9- 5.1 mm wide; scutellum small, nearly triangulate with rounded apex, punctured with small punctures and glabrous; forewing (Pic. 3a) long but not covering all abdominal segments, convex, covered with short yellow hairs, with nine punctuated strips, black colored but each elytrum has three yellowish brown spots, hindwing with transverse vein between the AA1+2 and the CuA very shortened (vestigial); foreleg (Pic. 3b) moderate sized, smaller than the midleg and hindleg, black colored, fore- coxae big, elongate and nearly without hairs, trochanter small and triangular, fore- femura stout, as tall as the coxa, with long yellow hairs at outer surface, fore- tibia gradually broadened to tip and nearly elongate- triangular form, spinulose at outer apical angle, the inner side obliquely grooved, the inner spur not remote from tip, the terminal spur short, broad, laminate at the sides and suddenly narrower at tip, tarsi five segmented, with little short hairs, each with two lateral big equal spines apically, the first four segments are nearly triangular and equal sized, the 5<sup>th</sup> twice as long as each of the four preceding segments and with two long unequal stout divergent claws apically.

#### **ABDOMEN**

The Abdomen appears with six obvious segments, covered with scattered short yellow hairs, the 7th abdominal segment's sternite and the 7th tergum fused, about 6.5- 6.9 mm long, 7.2- 7.4 mm wide, the 1<sup>st</sup> wider than the other last four which they are nearly equal in width, yellowish brown colored except for the 7th abdominal segment's sternite and the eight obvious terga which are brown colored; anal plate (Pic.4d) triangular, punctuated, covered with short yellow hairs evenly, black colored, distal margin nearly rounded, exposed beyond the elytra.

#### **MALE GENITALIA (Pics.4a, b, c, and e)**

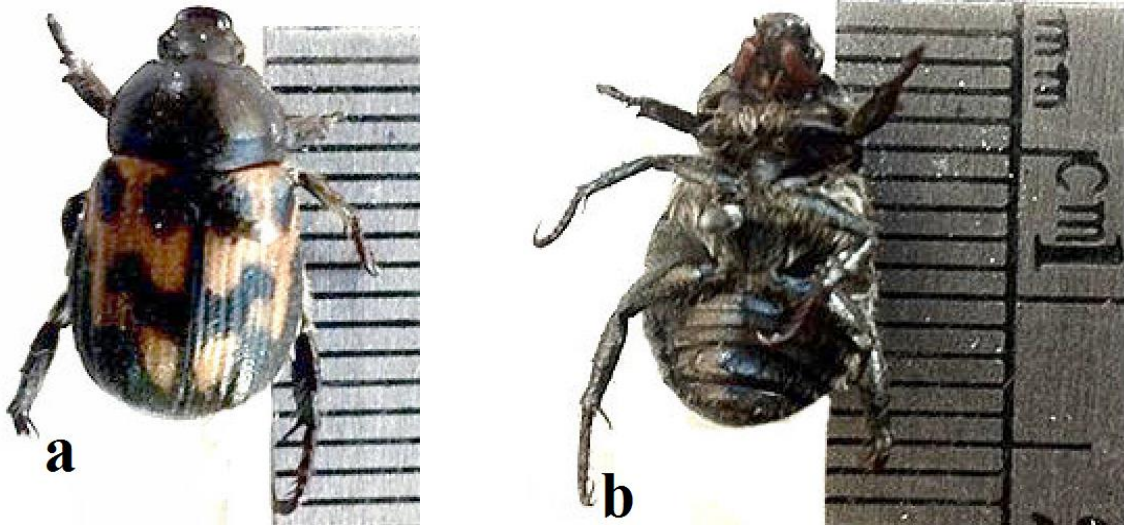
The Aedeagus (Pic.4a, c) is elongated, brown colored; parameres hollowed, forcipes-like, flattened and enlarged until its two third then narrowed towards the apex which is curved inwards, brown colored, first basal piece small, brown colored, second basal piece big, yellow colored, ventral plate big, elongated between the basis of the parameres, brown colored; speculum (Pic.4e) T- shaped with two semi- triangular sclerites.

#### **REMARKS**

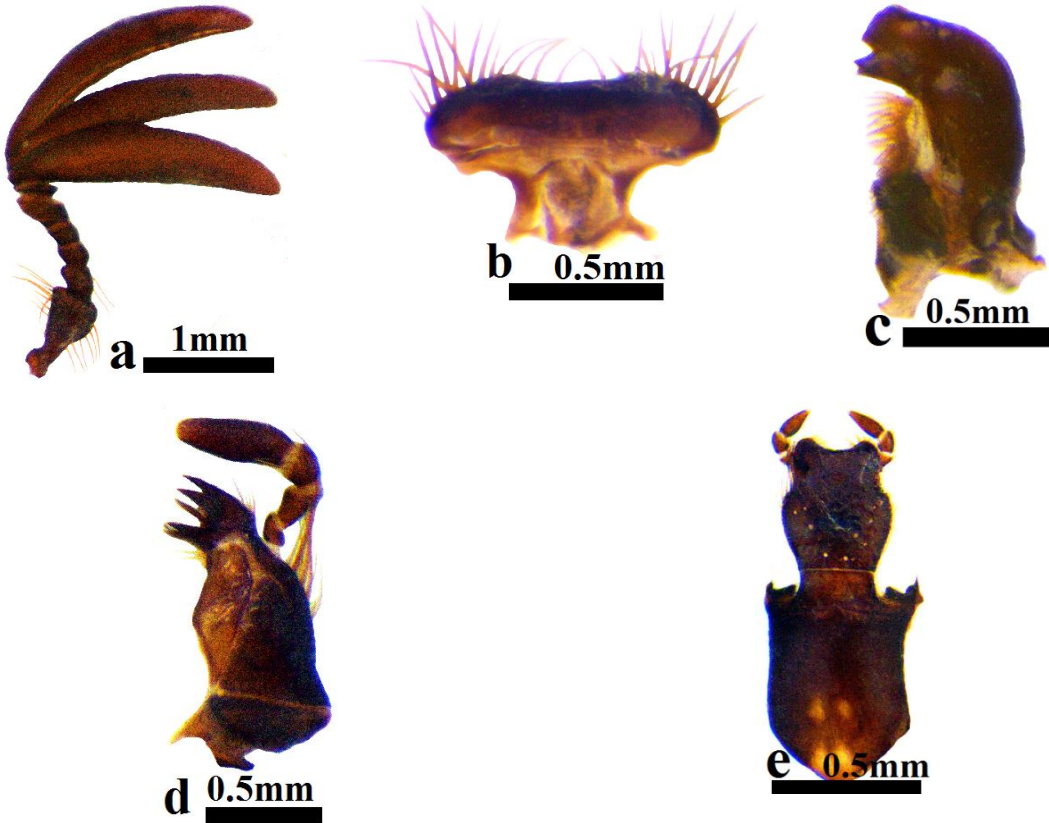
The genus *Asiopertha* is distinguished from the nearest genus *Blitopertha* by the shape of the ventral plate of the aedeagus. *Asiopertha nazarena* Marseul, 1878 previously it was recorded from Iran, Turkey and Israel, is recorded for the first time in Kurdistan region of Iraq.

#### **ACKNOWLEDGEMENT**

Thankfully the identification of the species was done by Dr. Guido Sabatinelli (Correspondent Member of Natural History Museum, Geneva, Switzerland) during his visit to our museum; also we thank him for his notes on the text and photos of this work.

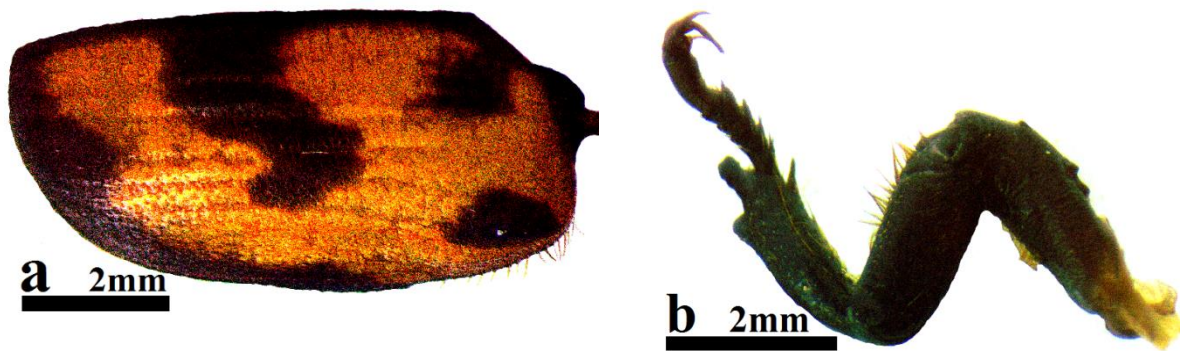


**Pic. (1) :** Body of *Asiopertha nazarena*: a. (Dorsal view); b. (Ventral view)

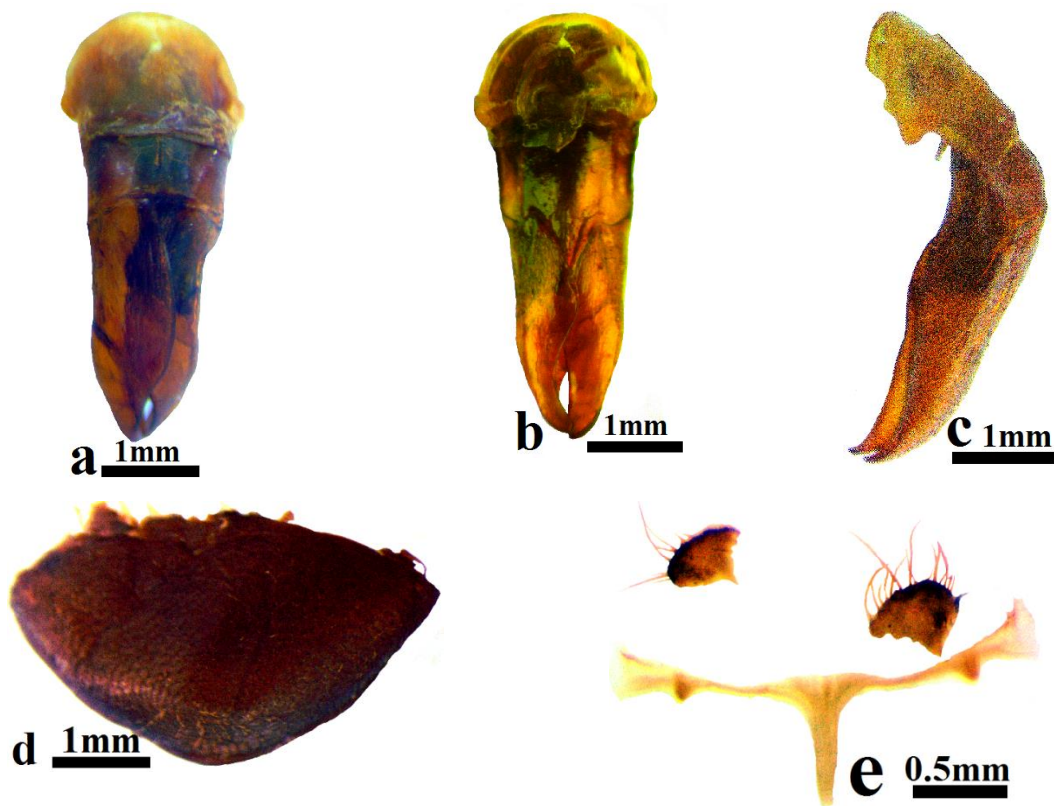


**Pic. (2) :** Antenna and mouthparts of *Asiopertha nazarena*  
a. Antenna; b. Labrum; c. Mandible; d. Maxilla; e. Labium





**Pic. (3):** a. Fore- wing and b. Foreleg of *Asiopertha nazarena*



**Pic. (4) :** Male abdomen appendages of *Asiopertha nazarena*

**a.** Male genitalia (Dorsal view); **b.** Male genitalia (Ventral view); **c.** male genitalia (Lateral view);  
**d.** Anal plate (Dorsal view); **e.** Spiculum gastrale and Gonocoxites

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**دووباره وه سفکردنی میرووی (Coleoptera: Scarabaeidae, Rutelinae) وهك جورىكى تازه بو عىراق له هه رىمى كوردستان- عىراق**

پوخته

**میرووی (Coleoptera: Scarabaeidae: Rutelinae) دووباره وه سفكره وهك جورىكى تازه بو عىراق له دانرابوون له مؤزه خانه ی میرووه كانی هه ولیر- به ریه به رایه تی تۆزینه وه ی كشتوكالی هه ولیر- وه زاره تی كشتوكال و سه رچاوه كانی ناو- هه رىمى كوردستان/ عىراق. هه راشه كانی جوره كه به وردی وه سف كراوه. وینه ی به شه گرینه كانی له ش وهك به شه كانی ده م, قوچی هه ستونه ندامی زاوژى نیره گیراوه. شوین و میژووی كوكردنه وه ی جوره كه باسكراوه.**

**اعادة وصف حشرة (Coleoptera: Scarabaeidae, Rutelinae) كنوع جدید للعراق في اقليم كوردستان- العراق**

الخلاصة

**حشرة (Coleoptera: Scarabaeidae: Rutelinae) Asiopertha nazarena Marseul, 1878 اعيد وصفها كنوع جديد للعراق باستعمال نماذج كانت موضوعة في متحف حشرات اربيل- مديرية اربيل للبحوث الزراعية- وزارة الزراعة والمصادر المائية- إقليم كوردستان/ العراق. وصفت كاملات النوع وصفا دقيقا. صورت أجزاء الجسم المهمة مثل أجزاء الفم, قرن الاستشعار والسوءة الذكرية. ذكرت مناطق وتواريخ جمع النوع.**