

**A new species of the licinine genus *Microzargus* Sciaky et Facchini, 1997  
from Hong Kong (Coleoptera: Carabidae: Licinini: Lestignathina)**

Martin BAEHR<sup>1)</sup> & Paul ASTON<sup>2)</sup>

<sup>1)</sup>Zoologische Staatssammlung, Münchhausenstr. 21, D-81247 München, Germany  
email: martin.baehr@zsm.mwn.de

<sup>2)</sup>2F, 102 Wang Tong, Mui Wo, Lantau, Hong Kong China  
email: paulaston70@hotmail.com

**Taxonomy, new species, description, Coleoptera, Carabidae, Licinini, *Microzargus*, Hong Kong, China**

**Abstract.** *Microzargus wangtongensis* sp. nov. is described from Hong Kong, southern China, and inserted into the most recent keys to species of the genus *Microzargus*. The species differs from the six previously described species in having well developed flying wings and in its occurrence in lowland, whereas all other species have been found at high altitudes.

## INTRODUCTION

The junior author (PA), caught 3 specimens of an unknown species of Carabidae in the vicinity of Wang Tong village on Lantau Island in Hong Kong, southern China. The specimens were identified by the senior author (MB), as clearly belonging to the genus *Microzargus* Sciaky & Facchini, 1997, but representing an undescribed species. In contrast to all six previously known species of the genus, which were collected at high altitudes, the new species was collected just above sea-level.

The genus *Microzargus* was founded for four species from Nepal and south-western China (Sichuan) (Sciaky & Facchini 1997). Subsequently, two additional species have been described (Facchini & Sciaky 2002, Guéorguiev 2013). The genus belongs to the licinine subtribe Lestignathina Ball, 1992. This subtribe is characterized by rather symmetrical mandibles and their long and sharply pointed incisor and terebral teeth, reduced or lacking labial suture, and asetose mentum (Ball 1992). Most genera and species of the subtribe occur in Australia (Moore et al. 1987, Sciaky & Facchini 1997, Baehr 2016, unpubl. checklist), one genus occurs in New Guinea (*Microferonia* Blackburn, 1890) (Darlington 1968, Baehr 1998), four genera occur in the Oriental Region including south-western China (*Atrotus* Peringuey, 1896, *Dilonchus* Andrewes, 1936, *Genyecerus* Andrewes, 1933, *Microzargus*) (Sciaky & Facchini 1997, Facchini & Sciaky 2002, Guéorguiev 2013), one genus occurs in Africa (*Atrotus* Peringuey, 1896) (Basilewsky 1951), and one genus occurs on Madeira and the Canaries (*Zargus* Wollaston, 1884) (Machado 1992). The subtribe is believed to represent a Gondwanan faunal element, with some genera today occurring on terranes that had been early attached to the northern continents (Sciaky & Facchini 1997).

## MATERIAL AND METHODS

The genitalia were removed from specimens relaxed for a night in a jar under moist atmosphere, then cleaned for a short while in hot 10% KOH. The habitus photographs (MB) were obtained by a digital camera using ProgRes CapturePro 2.6 and AutoMontage and subsequently were worked with Corel Photo Paint X4.

Measurements were taken using a stereo microscope with an ocular micrometer. Body length has been measured from the apex of the labrum to the apex of the elytra. Length of pronotum was measured along a straight line from the most anterior point of the apex to the most posterior part of the base; width of base of pronotum was measured at the position of the posterior lateral seta. Length of elytra was measured from the most advanced part of the humerus along a straight line to the most advanced part of the apex.

The picture of the type locality was taken by the junior author from the location of the light trap to the hills behind his house.

The holotype and a paratype are stored in the working collection of the senior author in Zoologische Staatssammlung, München (CBM), a paratype is located in the collection of the junior author (CAH).

### Genus *Microzargus* Sciaky et Facchini, 1997

*Microzargus* Sciaky et Facchini, 1997: 53. - Facchini & Sciaky 2002: 21; Guéorguiev 2013: 61.

**Type species:** *Microzargus schmidti* Sciaky et Facchini, 1997 (by original designation).

**Diagnosis.** Genus of the tribe Licinini and the subtribe Lestignathina, characterized by rather small body size, small head, deeply incised, quadrisetose labrum, elongate mandibles with blunt terebral tooth at the left mandible, but sharp terebral tooth at the right mandible, elongate antenna with very short 2<sup>nd</sup> antennomere, short, ovoid elytra, and elongate aedeagus without any strongly sclerotized parts.

Three of the six described species of *Microzargus* occur in Nepal, one in north Pakistan, one in southern Tibet, and one in south-western Sichuan. But all species were sampled at high altitudes, 2.500 to 4.600 m above the sea level.

In contrast to these montane species, the new species was collected at rather low altitude on Lantau Island 10 km away from the city of Hong Kong.

### *Microzargus wangtongensis* sp. nov.

(Figs. 2-5)

**Type material.** Holotype (♂) labeled: 1 of 20.xii.10 Wang Tong Lantau HK / Coll. Paul Aston Hong Kong, China (CBM). Paratypes: (1 ♂): 1 of 3.x.2014 Wang Tong Lantau HK L. / Coll. Paul Aston Hong Kong, China (CAH); (1 ♀): 1 of 16.x.2012 Wang Tong Lantau HK L. / Coll. Paul Aston Hong Kong, China (CBM).



Fig. 1. Type locality of *Microzargus wangtongensis* sp. nov. The specimens most probably came to the light trap from the hills in the background.

Fig. 2. *Microzargus wangtongensis* sp. nov. Habitus (female paratype). Length: 7.2 mm.

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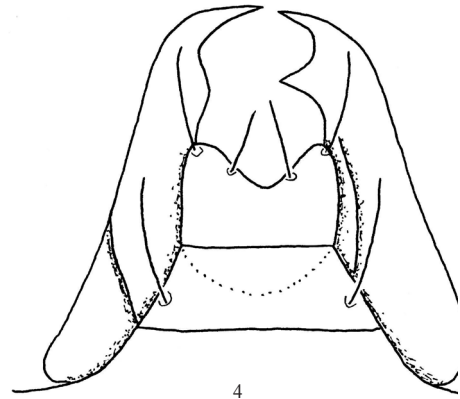
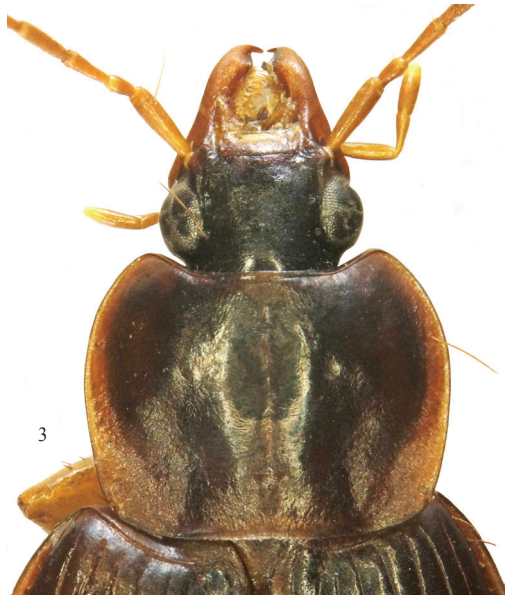


**Description.** Measurements. Body length: 6.9-7.2 mm; width: 2.9-3.0 mm. Ratios: Width/length of pronotum: 1.32-1.35; width base/apex of pronotum: 1.39-1.42; length/width of elytra: 1.50-1.52.

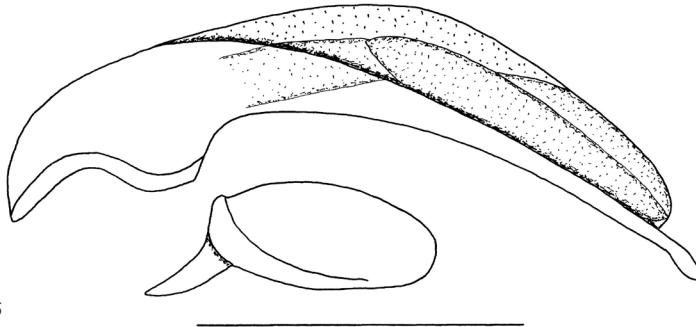
Colour (Figs 2, 3). Head and elytra dark piceous to almost black, pronotum slightly lighter; lateral margins of pronotum and elytra pale, suture of elytra also very narrowly pale. Clypeus yellow to pale red, labrum and mandibles reddish-piceous; palpi, antenna, and legs uniformly dark yellow to pale red. Epipleura of elytra pale red; lower surface of head and prothorax piceous, of abdomen dark piceous.

Head (Figs 3, 4). Small in comparison to prothorax. Eye large though laterally little produced, orbit very short. Clypeus narrow, bisetose, anterior central part of clypeus membranous. Labrum medially with a deep, symmetrical v-shaped excision for about half of its length, quadrisetose. Mentum without tooth, ligula bisetose, glossa and paraglossae about equal in length. Palpi slender and elongate, terminal palpomere of both palpi thickened and with sparse and extremely short pilosity. Both mandibles dentate in apical third; tip incurved and very acute. Terebral tooth of the left mandible blunt, of the right mandible sharply pointed. Frons convex, without any distinct frontal furrow. Both supraorbital setae elongate. Antenna slender and elongate, attaining the anterior third of the elytra; basal antennomere very elongate, the 2<sup>nd</sup> one short, the 3<sup>rd</sup> one longer than the 2<sup>nd</sup> but slightly shorter than the 4<sup>th</sup> one; apical antennomeres slightly < 3 x as long as wide; antenna pilose from 4<sup>th</sup> antennomere. Dorsal surface of head impunctate, with distinct, isodiametric microreticulation.





Figs. 3-5. *Microzargus wangtongensis* sp. nov.: 3- head and pronotum; 4- clypeus, labrum, and mandibles; 5- male genitalia: aedeagus, left and right parameres. Scale bar: 0.5 mm.



Prothorax (Fig. 3). Wider than long, considerably wider than head, widest at or slightly in front of middle. Apex deeply excised, medially straight, anterior angles protruding though rounded. Lateral margin convex, but more so in apical half. Posterior angles widely rounded, base almost straight but slightly concave in middle. Apex and lateral borders with narrow margin, base margined, but lateral parts only indistinctly margined. Lateral margin slightly deplanate towards base. Median line distinct though shallow, not attaining apex nor base. No anterior and posterior transverse impressions present. Basal impressions wide and shallow, situated halfway to middle of base. Disk moderately convex, near posterior angles somewhat explanate. Surface on disk with some extremely faint, transverse striolae, apex in middle with some short, longitudinal, radiating strioles. The whole lateral part of the basal half with dense, fine though very rugose, irregularly striolate microsculpture, in addition with fine microreticulation, which gives this area a remarkably dull appearance. Surface in middle with extremely fine, superficial, rather transverse microreticulation, contrastingly

glossy. Anterior marginal seta situated near the anterior third, slightly removed from margin. Posterior marginal pore situated at basal curvature, right on margin.

Elytra (Fig. 4). Elongate, little widened apicad, almost parallel-sided, widest slightly behind middle, considerably wider than prothorax; dorsal surface rather depressed. Humeri slightly projected but rounded. Lateral margin in middle almost straight. Striation complete, striae well impressed, impunctate, intervals gently convex. Scutellary striola elongate, situated in 1<sup>st</sup> interval, in one paratype meeting the 1<sup>st</sup> stria. Scutellary puncture and seta present at the meeting point of 1<sup>st</sup> and 2<sup>nd</sup> striae. 3<sup>rd</sup> interval with a setiferous puncture situated slightly behind the basal third, puncture attached to the 2<sup>nd</sup> stria. Marginal series consisting of 7 basal and 8 apical punctures, series not much interrupted in middle. Two additional punctures situated preapically and apically at the 7<sup>th</sup> stria and between the 2<sup>nd</sup> and 3<sup>rd</sup> striae. Intervals impunctate, without perceptible microreticulation, very glossy and rather iridescent. Metathoracic wings fully developed.

Lower surface. Impunctate. Metepisternum c. 1.5 x as long as wide. Terminal abdominal sternite in the male apparently with 2 setae on either side (very difficult to detect in the holotype), in the female with 5 rather elongate setae on either side.

Legs. Slender and elongate. 1<sup>st</sup> -3<sup>rd</sup> tarsomeres of the male anterior tarsus dilated, squamose beneath. Metatarsus very slender. 5<sup>th</sup> tarsomeres of all legs slender, lower surface setose.

Male genitalia (Fig. 5). Aedeagus rather elongate, straight, lower surface slightly concave. Apex obtuse, straight, tip faintly knobbed and slightly turned down. Orificium very elongate, rather symmetric. Internal sac consisting of two rather symmetric folds, without any sclerotized parts. Parameres very dissimilar, right paramere club-shaped.

**Variability.** Some variations noted in shape of pronotum and distinctness of the microreticulation of the head.

**Diagnosis.** Species of the genus *Microzargus* by means of the blunt terebral tooth of the left mandible and the sharp, pointed terebral tooth of the right mandible. Distinguished from other members of the genus by a combination of the following character states: large body size; uniformly dark yellow palpi, antenna, and legs; protruded apical angles and densely microsculptured lateral basal part of the pronotum; laterally almost parallel-sided elytra; and fully developed metathoracic wings.

**Collecting circumstances.** All specimens were collected in October and December in the vicinity of the village of Wang Tong on the eastern side of the Lantau Island. Two of the specimens were collected in the month of October at a light trap on the roof of the junior author's house. Although the light trap is based at about sea level, it is likely that the specimens came from higher altitude, e.g. the hills Lin Fa Shan (766 m NN), about 1.5 km away from the trap. Many higher altitude species have been recorded at the light trap in that month, presumably escaping the drying hill tops and to a lesser extent the cooling temperatures. The third specimen was collected while crossing a footpath, 3 days after an extreme fall in the temperature.

**Etymology.** The name refers to the type locality, Wang Tong village, Lantau Island, near Hong Kong, China.

**Distribution.** Wang Tong on the island of Lantau, south-western Hong Kong. Known only from type locality.

#### IDENTIFICATION

When using the key in Facchini & Sciaky (2002), in combination with the partial key in Guéorguiev (2013), according to the presence of both pronotal setae and the completely pale palpi, antenna, and legs, couplet 2 is reached which must be changed as follows:

- 2. Legs, palpi, and antenna at least partly dark.....3.
- Legs, palpi, and antenna completely dark yellow or pale brown..... 2a.
- 2a. Body size smaller, length 6.4 mm; pronotum wider, ratio width/length 1.39, apical angle little produced; basal impressions of pronotum not densely microsculptured ..... *tibetanus* Facchini et Sciaky, 2002
- Body size larger, length > 6.9 mm; pronotum narrower, ratio width/length < 1.35; apical angle markedly produced; basal impressions of pronotum densely microsculptured (Fig. 3).....*wangtongensis* sp. nov.
- 3. Body size larger, length > 7 mm; pronotum more transverse, widest at middle, apical angle more prominent; sides of elytra remarkably convex .....*pakistanus* Guéorguiev, 2013
- Body size smaller, < 7 mm; pronotum less transverse, widest in front of middle, apical angle less prominent; sides of elytra moderately convex.....see Facchini & Sciaky, 2002: 24.

#### REMARKS

The new species clearly belongs to the genus *Microzargus* and with respect to its morphology, it belongs to the main body of the genus. The most peculiar character is probably the very dull base of the pronotum, a character state that has not been mentioned in the descriptions of any other species.

However, the new species is very different in its habits, because it is the only species of the genus which has been collected at rather low altitude, whereas all other described species occur in high montane areas above 2.500 m. Also, it has fully developed metathoracic wings. Unfortunately, in the descriptions of most other species the wing status has not been mentioned, except in *M. tibetanus* Facchini et Sciaky, 2002 and *M. pakistanus* Guéorguiev, 2013, where they are said to be “markedly reduced” resp. “vestigial”. Concerning their high montane habits, it is likely that the wings are also reduced in the other four species.

The occurrence of a species in lowland and with fully developed wings, active enough to be caught at a light trap, gives occasion to speculate about the origin, respectively the biogeographical history of the genus. Presence of flying wings and occurrence in lowland are *per se* plesiomorphic character states, so that we could assume that *M. wangtongensis* is the basic species of the genus, or at least close to the roots of the genus, with respect to its phyletic status.

Certainly *Microzargus* in shape and structure much resembles the African and West Oriental genus *Atrotus* Peringuey, 1896, so that we could speculate about close relationships to that genus. However, according to its southern and eastern range, the new lowland species might be rather related to one of the southern Oriental genera, as *Dilonchus* Andrewes, 1936 or *Genyecerus* Andrewes, 1933, and this would suggest a southern origin of the genus.

However, in view of the still very fragmentary knowledge of species inventory and distribution of the genus, those questions certainly are premature. On the other hand, they could promote further, intensified collecting efforts as well as work on the phyletic relationships, the latter including a general molecular survey of the genus and its relatives, which might prove to be useful.

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