

## A new species of *Taeniodera* Burmeister, 1842 from the *Taeniodera cervina* species group (Coleoptera: Scarabaeidae: Cetoniinae)

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**Taxonomy, new species, Coleoptera, Scarabaeidae, Cetoniinae, Taenioderini, *Taeniodera*, Indonesia, Sumatra, Kalimantan, Malaysia**

**Abstract.** *Taeniodera inexpectata* sp. nov. is described from Indonesian Kalimantan. The new species is placed in the *Taeniodera cervina* species group. It resembles both species in the *cervina* group occurring in the Greater Sundas. The new species shares part of morphological characters of both known species, *Taeniodera corticalis* Wallace, 1867 and *Taeniodera cervina* Wallace, 1867. Illustration of all four species of the *Taeniodera cervina* species group, including illustration of male parameres is provided. Separate keys to species in the *Taeniodera cervina* group are given for males and females and the distribution of the whole group is shortly discussed.

### INTRODUCTION

*Taeniodera* species belonging to *Taeniodera cervina* species group can be characterised by the complex of following characters: smaller to medium sized 14-18 mm; major part of ventrum and dorsum covered with ochre ornament (excepting *Taeniodera corticalis insularis* Jákl, 2014); head slightly widening from the level of eye canthus; elytral base much wider than pronotum; elytral, subhumeral emargination rather shallow; abdominal impression of males missing or present; mesometasternal process small with straight or curved apex; male parameres simple with rounded or more sharply developed apical hook; sexually very dimorphic. Species of *cervina* group occur in Malaysian Peninsula, Sumatra, Nias, Kalimantan and Sulawesi Islands in Indonesia. Occurrence in Java is questionable.

Both currently known Sundanese species were described by Wallace (1867), *Taeniodera corticalis* from Penang and *Taeniodera cervina* from Malaysian Peninsula. Mikšič (1976) considered *Taeniodera corticalis* Wallace as a subspecies of *Taeniodera cervina* Wallace. Antoine (1989) returned *Taeniodera corticalis* Wallace to the species level. Krikken (1982) described *Taeniodera celebensis* from Sulawesi. Jákl (2014) described *Taeniodera corticalis insularis* as a subspecies from Nias Island.

Recently I examined three *Taeniodera* specimens coming from southwestern corner of Indonesian Kalimantan. This species shares part of characters with *Taeniodera cervina* Wallace and other part of characters with *Taeniodera corticalis* Wallace. In shape of male parameres, this species stays closer with *Taeniodera corticalis* Wallace occurring in Sumatra, Nias and Malaysian Peninsula. Closer examination of this rather unexpected finding revealed that species is undescribed and its diagnosis with description and comparison with its congeners is given in the taxonomical part of the present article.

## MATERIAL AND METHODS

The following codens of institutional and private collections are used in the text:

BMNH British Museum Natural History, London, United Kingdom;

MNHN Muséum National d'Histoire Naturelle, Paris, France;

RMNH Rijksmuseum van Natuurlijke, Leiden, the Netherlands;

SJCP Stanislav Jákl, private collection, Praha, Czech Republic

Specimens of newly described species are provided with red and yellow printed labels, red for HOLOTYPUS, yellow for PARATYPUS. Each holotype or paratype label is provided with sex symbol, number of paratype (in paratype label) and words. St. Jákl det. Label data are cited for material examined, individual labels are indicated by a double slash (/), individual lines by a single slash (/).

## TAXONOMY

### *Taeniodera cervina* (Wallace, 1867)

(Figs. 1-5)

*Macronota cervina* Wallace, 1867: 94 (original combination), 1868: 553 (catalogue); Schenkling, 1921: 136 (catalogue).

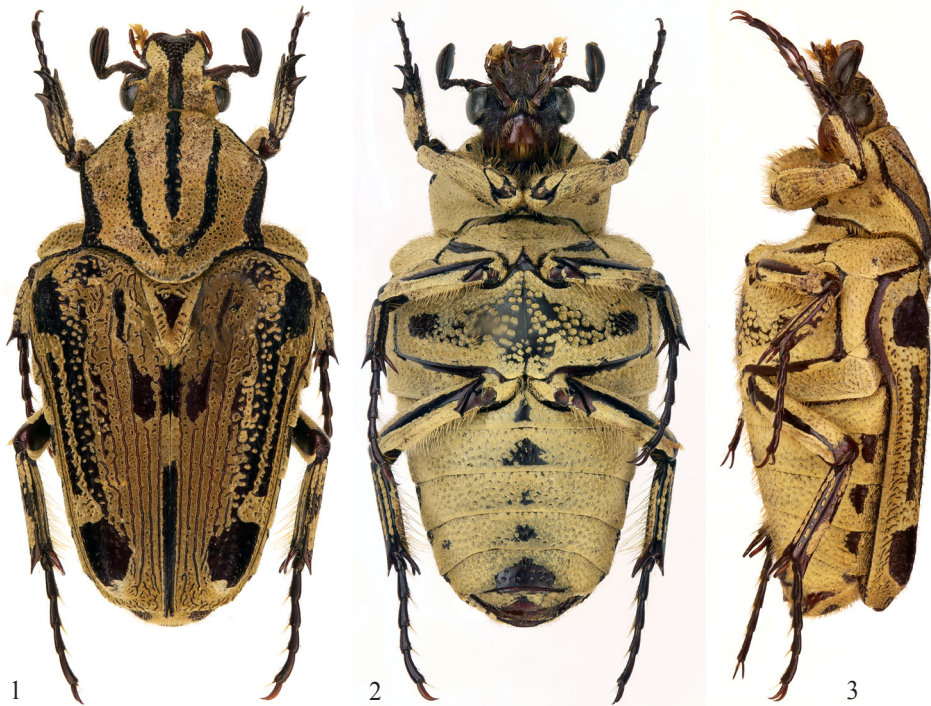
*Taeniodera cervina* Wallace: Schoch, 1896: 36 (catalogue); Mikšič, 1976: 142, fig. 13b (monograph); Antoine, 1989: 8, figs. 39-42 (reclassification); Krajčič, 1998: 93 (catalogue); Sakai & Nagai, 1998: 348, fig. 1549-1 male, Borneo, 1549-2 female Borneo (iconography); Legrand & Chew Kea Foo, 2010: 61, fig. 78 parameres, photo 165 male, 166 female (Cetoniidae of Sabah).

**Type locality.** "Malay Peninsula" (= Malaysia, Malaysian Peninsula).

**Type material.** Holotype (♂), MNHN (ex coll. J. Thomson, ex coll. Wallace).

**Additional material examined:** 1 ♂ (SJCP) labelled: Sabah, N. BORNEO/ E. MALAYSIA/ MAR. 2003// Kimanis Rd. 1000 m/ Crocker Range; 1 ♂, 1 ♀ (SJCP) labelled: Malaysia, SABAH/ Crocker Range/ IV. 2006/ S. Chew lgt; 4 ♂♂, 1 ♀ (SJCP) labelled: Indonesia, C. Kalimantan/ MT. PAYANG800-1200 m/ 3. 2008, local collector lgt; 1 ♀ (SJCP) labelled: BORNEO, SABAH/ CROCKER RANGE E/ W of APIN APIN/ 2. 2000/ lgt M. Snížek.

**Distribution.** Malaysia: Malaysian Peninsula, Borneo Island; Indonesia: Kalimantan Island.



Figs. 1-5. *Taeniodera cervina* (Wallace, 1867): 1- habitus, dorsal aspect; 2- habitus, ventral aspect; 3- habitus, lateral aspect; 4- aedeagus, dorsal aspect; 5- aedeagus, lateral aspect.

***Taeniodera corticalis* (Wallace, 1867)**

(Figs. 6-10)

*Macronota corticalis* Wallace, 1867: 94 (original combination), 1868: 554 (catalogue); Schenkling, 1921: 137 (catalogue).

*Taeniodera cervina corticalis* Wallace: Mikšič 1976: 144, fig. 13c (monograph); Krajčič, 1998: 93 (catalogue).

*Taeniodera corticalis* Wallace: Antoine, 1989: 8, figs. 35-38 (valid species); Sakai & Nagai, 1998: 349, fig. 1550-1 male Malaysian Peninsula, fig. 1550-2 female, Malaysian Peninsula, fig. 1550-3 male, Nias Island (iconography); Krajčič, 1999: 66 (Addenda et corrigenda, catalogue Part I); Legrand & Chew Kea Foo, 2010: 62, fig. 80 (parameres), photo 171-male 172-female (Cetoniidae of Sabah).

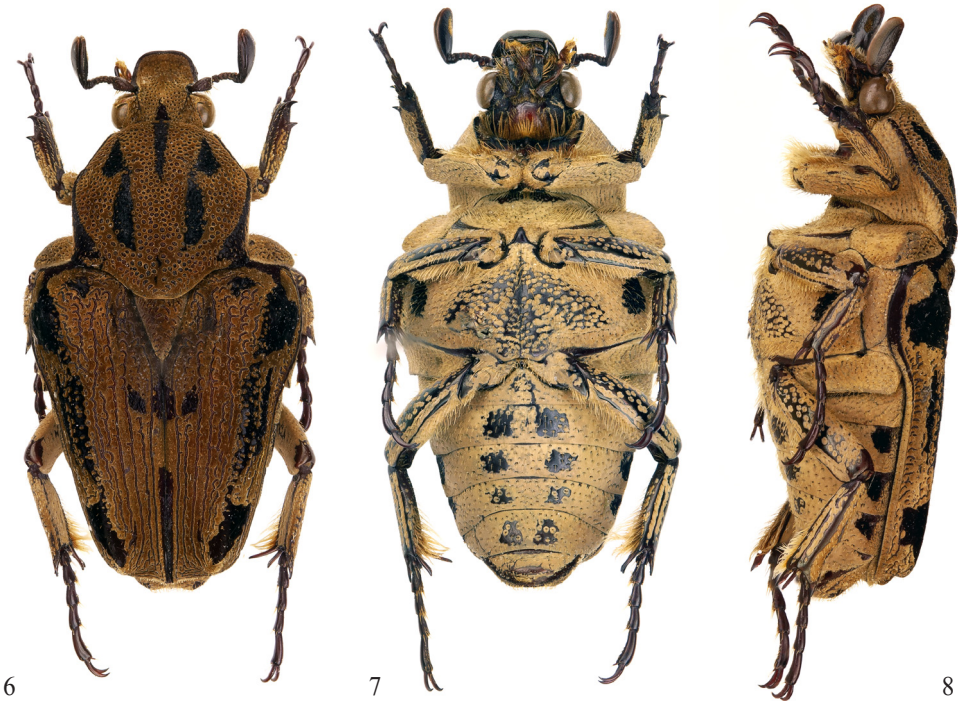
**Type locality.** “Penang“ (= Malaysia, Penang).

**Type material.** Holotype (♀), BMNH.

**Additional material examined:** 2 ♂♂ (SJCP) labelled: INDONESIA/ W. Sumatra/ Anai valley, 800m/ II. 1995/ native collectors; 4 ♀♀ (SJCP) labelled: INDONESIA/ W. Sumatra/ Anai valley, 800 m/ IV.1995/ native collectors leg; 1 ♂ (SJCP) labelled: Indonesia, West Sumatra/ MT. TALANG, 1200-1600m/ SOLOK AREA, 11. 2004/ St. Jákl leg.

**Distribution.** Malaysia: Malaysian Peninsula, Borneo Island; Indonesia: Sumatra Island.

**Note.** Specimen depicted in Sakai & Nagai (1998) under fig. 1550-3 belongs to *Taeniodera corticalis insularis* Jákl, 2014.





Figs. 6-10. *Taeniodera corticalis* (Wallace, 1867): 6- habitus, dorsal aspect; 7- habitus, ventral aspect; 8- habitus, lateral aspect; 9- aedeagus, dorsal aspect; 10- aedeagus, lateral aspect.

***Taeniodera corticalis* ssp. *insularis* Jákl, 2014**

*Taeniodera corticalis insularis* Jákl, 2014: 437, figs. 9-13 (original combination).

**Type locality.** Indonesia, N. Sumatra, Nias Island.

**Type material.** Holotype (♂), and paratypes (3 ♂♂), SJCP.

**Additional material examined.** None.

**Distribution.** Indonesia: Nias Island.

***Taeniodera celebensis* Krikken, 1982**  
(Figs. 11-15)

*Taeniodera celebensis* Krikken, 1982: 113, figs. 1-7 (original combination); Jákl, 2019: 340, figs. 1-5 (*Taenioderini* of Sulawesi).

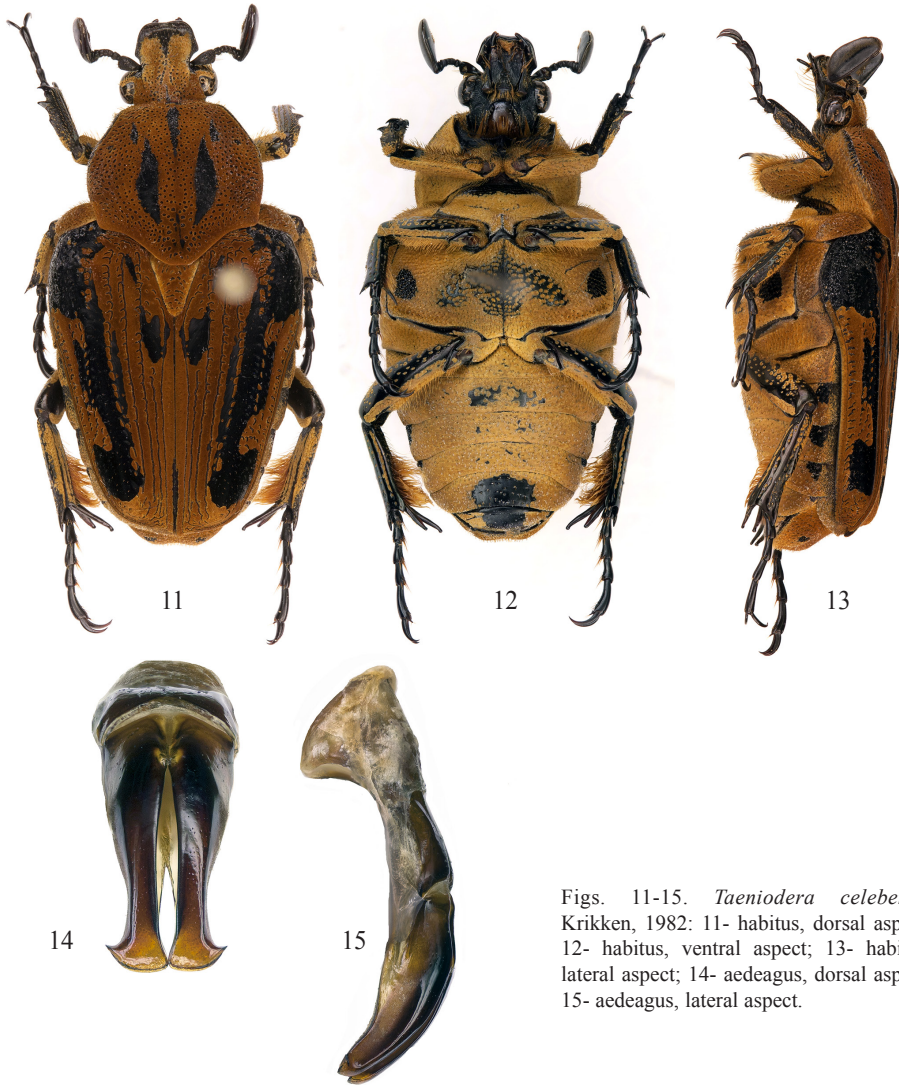
**Type locality.** “North Sulawesi, Goeroepahi“ (= Indonesia, N Sulawesi, Goeroepahi).

**Type material.** Holotype (♂), RMNH.

**Additional material examined:** 1 ♂ (SJCP) labelled: INDONESIA, C. Sulawesi/ Puncak Palopo pass/ XI. 2017/ local collector leg.

**Distribution.** Indonesia: North and Central Sulawesi.





Figs. 11-15. *Taeniodera celebensis* Krikken, 1982: 11- habitus, dorsal aspect; 12- habitus, ventral aspect; 13- habitus, lateral aspect; 14- aedeagus, dorsal aspect; 15- aedeagus, lateral aspect.

***Taeniodera inexpectata* sp. nov.**

(Figs. 16-20)

**Type locality.** Indonesia, SW Kalimantan, Mt. Bawang, Madi village env., 1000-1500 m.

**Type material.** Holotype (♂) labelled: INDONESIA, SW Kalimantan/ MT. BAWANG, 1000-1500m / Singkawang distr., Madi vill. env. / VI. 2018, local collector leg., (SJCP). Paratype: (1 ♂) labelled: INDONESIA, Kalimantan Barat Pr./ SW Kalimantan, 1000-1500m alt./ Singkawang region, 15.-30.I. 2019/ MT. BAWANG, Madi vill. env./ local collector leg., (SJCP).

**Description of holotype.** Black with abundant dorsal and ventral ochre ornament. Size 14.00 mm.

**Head.** Brownish, except of margins and middle line with cover of ochre ornament. Widest point in front of clypeal half. Apical margin of clypeus moderately elevated and very shallowly emarginate. Punctuation not very dense, puncture diameters smaller than interspaces. Setation yellowish, thin.

**Pronotum.** Completely covered with ochre ornament, leaving black only lateral margins, part of middle line and two irregularly shaped broader lines in pronotal disc. Punctuation dense with large punctures diameters, which are nearly same large as interspaces. Sides with obtuse border, not reaching posterolateral margins.

**Scutellum.** Black, with complete cover of ochre ornament. Specially near apex with striolation.

**Elytra.** Sides and lateral ridge black, apex and sutural ridge brown. Most of surface with cover of ochre ornament. Each elytron with four striolate lines, parts of lateral ridge and lateral margins with transversally developed striolation. Humeral and apical calli distinctly produced, humeral calli more obtuse. Sutural ridge flat, in its posterior third slightly elevated. Subhumeral emargination rather shallow, elytral disc merging into lateral sides very sharply. Yellowish setation distributed very sparsely.

**Pygidium.** Brownish, semicircularly shaped. Except of two brownish rounded spaces in pygidial disc, with complete cover of ochre ornament.

**Ventrum.** Coloration black to brown, almost completely covered with ochre ornament. Abdominal impression very shallow, but visible. Abdominal setation yellowish, very thin. Mesosternum brownish, its sides with complete cover of ochre tomentum. Metasternal plate unusually and very distinctly arched, with very large, irregularly shaped punctures, which are filled with ochre ornament. Mesometasternal process tiny, narrowing to its apex. Metepimeron, mesepimeron and prosternum with complete cover of ochre ornament.

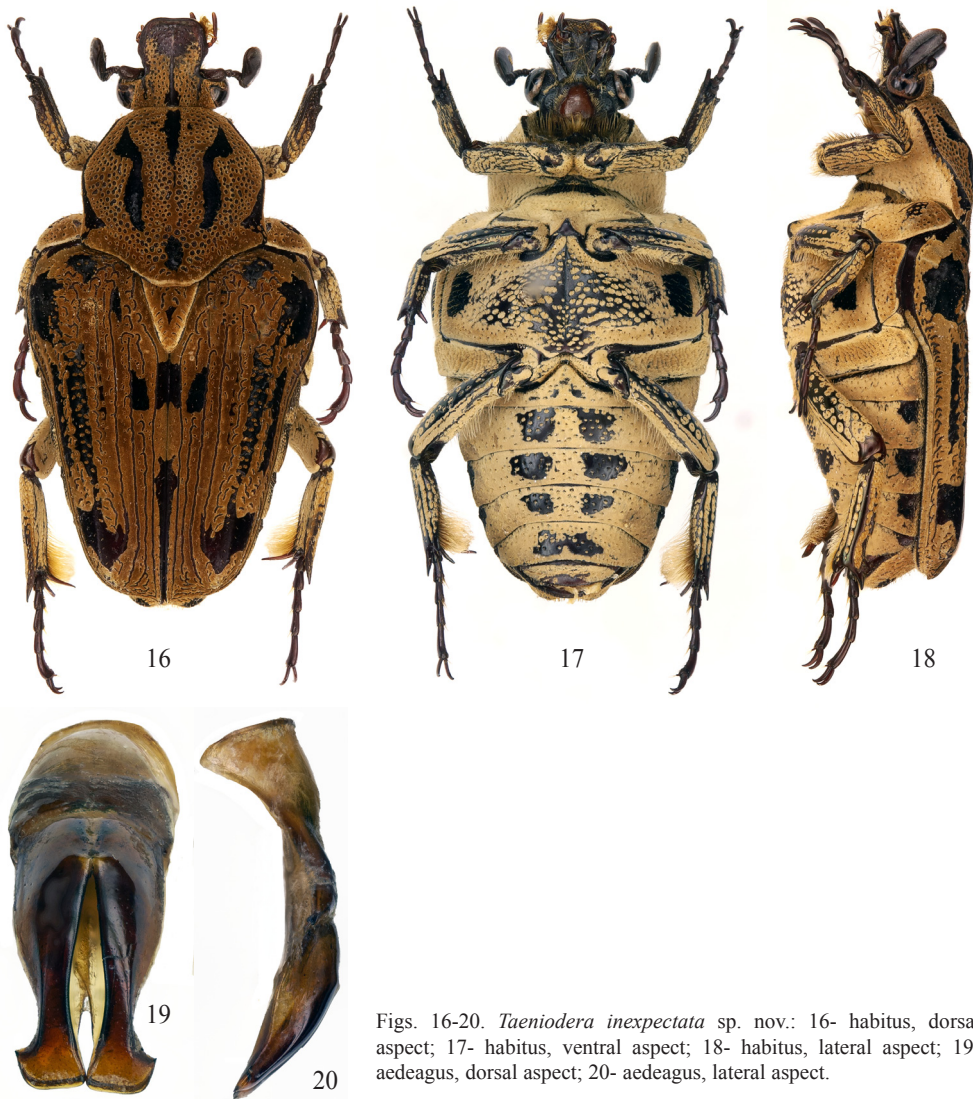
**Legs.** Coloration of femurs, tibia and tarsi brownish, excepting tarsi with abundant ochre ornament. Posterior margins of meso- and metafemora and anterior margins of profemora with yellowish setation. Protibia bidentate. Posterior half of metatibia with brush of yellowish setae on its inner side. Terminal spurs of metatibia moderately long, outer spur distinctly flattened. Meso- and metatibia without carina in posterior half.

**Genitalia.** Male parameres in anterior half nearly parallel, in front of apex rather sharply narrowing, apical part with wide ending (Figs. 19-20).

**Variability.** Second male (Paratype) same with holotype in all morphological aspects, including size and ornament pattern.

**Sexual dimorphism.** Female unknown.

**Differential diagnosis.** The newly described species is similar with both Sundanese species occurring in Malaysia and Indonesia. From *Taeniodera cervina* Wallace it can be distinguished in the following aspects: in *T. cervina* apical margin of clypeus not upturned, in middle moderately deeply emarginate, but in the new species upturned and nearly



Figs. 16-20. *Taeniodera inexpectata* sp. nov.: 16- habitus, dorsal aspect; 17- habitus, ventral aspect; 18- habitus, lateral aspect; 19- aedeagus, dorsal aspect; 20- aedeagus, lateral aspect.

straight; terminal spurs of metatibia in *T. cervina* normally developed, sharp, but in new species outer terminal spur distinctly flattened and widened; mesometasternal process in *T. cervina* in front of its apex with additional rather large tubercle, but normally developed in the new species; male parameres with rounded ending in *T. cervina*, but with more obtusely developed ending in the new species. The following characters differentiate *T. corticalis* and the new species from each other: clypeal apical margin in *T. corticalis* upturned and elevated, but only finely elevated in new species; mesometasternal process in *T. corticalis* in its apex moderately heading downwards, but straight in the new species; metasternal



plate flat or arched in *T. corticalis*, but with impression in the new species; elytral striolate lines running longitudinally in posterior half of elytral disc in *T. corticalis*, but in nearly total elytral length in new species; male parameres in *T. corticalis* with nearly quadratical ending, but more obtuse in the new species. From *Taeniodera celebensis* Krikken, 1982 the new species can be easily distinguished by much smaller size (17-18 mm in *T. celebensis*); antennal club longer than stalk in *T. celebensis*, but shorter in the new species; absence of abdominal impression in *T. celebensis*, which is present in the new species and by the shape of male parameres with sharp terminal hook in *T. celebensis*, but obtusely developed in the new species.

**Etymology.** Named after unexpected finding of new species of *Taeniodera* in the "cervina" group in the Greater Sundas.

**Distribution.** Indonesia, SW Kalimantan, Mt. Bawang.

#### KEY TO MALES OF *TAENIODERA CERVINA* SPECIES GROUP

- 1 (2) Apical margin of the clypeus not bordered, not upturned, with moderately developed apical emargination. Mesometasternal process with tubercle in front of the apex. Small sized species (13-14.5 mm) from Borneo and Malaysian Peninsula ..... *Taeniodera cervina* Wallace, 1867
- 2 (1) Apical margin of the clypeus with border or upturned, apical emargination very fine or completely missing. Mesometasternal process without tubercle in front of its apex.
- 3 (4) Apical margin of the clypeus with fine border and indistinctly emarginate. Small species (13.5-15 mm) with flattened outer terminal spurs of metatibia. Species from Indonesian Kalimantan ..... *Taeniodera inexpectata* sp. nov.
- 4 (3) Apical margin of the clypeus with rather high incised border and upturned apex of the clypeus
- 5 (6) Antennal club longer than stalk. Apical margin of the clypeus with incised border, but not upturned. Coloration of ornament orange to brownish. Larger species (17-18 mm) from Sulawesi ..... *Taeniodera celebensis* Krikken, 1982
- 6 (5) Antennal club shorter or same as stalk. Apex of the clypeus upturned. Coloration of dorsal and ventral ornament ochre to yellowish.
- 7 (8) Ochre ornament very abundant, covering most part of dorsal and ventral surface. Size 14-15 mm. Species from Malaysian Peninsula, Sumatra and Borneo. .... *Taeniodera corticalis corticalis* Wallace, 1867
- 8 (7) Dorsal and ventral ornament reduced, covering only minor part of body surface, especially in dorsum. Size 16.5-17.5 mm. Subspecies from Nias Island..... *Taeniodera corticalis insularis* Jákl, 2014

#### KEY TO FEMALES OF *TAENIODERA CERVINA* SPECIES GROUP

- 1 (2) Apex of the clypeus straight with fine emargination. Mesometasternal process with tubercle in front of its apex. .... *Taeniodera cervina* Wallace, 1867
- 2 (1) Apex of the clypeus with border, straight. Mesometasternal process simply developed..... *Taeniodera corticalis* Wallace, 1867

**Note.** Females of *Taeniodera celebensis* Krikken, 1982, *Taeniodera corticalis insularis* Jákl, 2014 and *Taeniodera inexpectata* sp. nov. are not yet known.

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