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Two new *Erganoides* species from P. R. China and Taiwan (Coleoptera: Chrysomelidae: Galerucinae)

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Abstract. *Erganoides pallens* Beenen n. sp. is described from Sichuan and *Erganoides tsoui* Lee & Beenen n. sp. is described from Taiwan.

Key words: entomology, taxonomy, new species, Coleoptera, Chrysomelidae, Galerucinae, China, Taiwan.

INTRODUCTION

Among unidentified material from P.R. China and from Taiwan two different species of *Erganoides* were detected. Although in P.R. China eight *Erganoides* species have been recorded, no previous records of this genus for Taiwan have been published before (Beenen, 2010). None of the species described in *Erganoides* are conspecific with the specimens we detected. The new species are described below.

Abbreviations

The following acronyms will be used in this article:
RBCN - Ron Beenen Collection, Nieuwegein, The Netherlands;
TARI – Taiwan Agricultural Research Institute, Wufeng, Taiwan.

THE GENUS *ERGANOIDES* AND RELATED GENERA

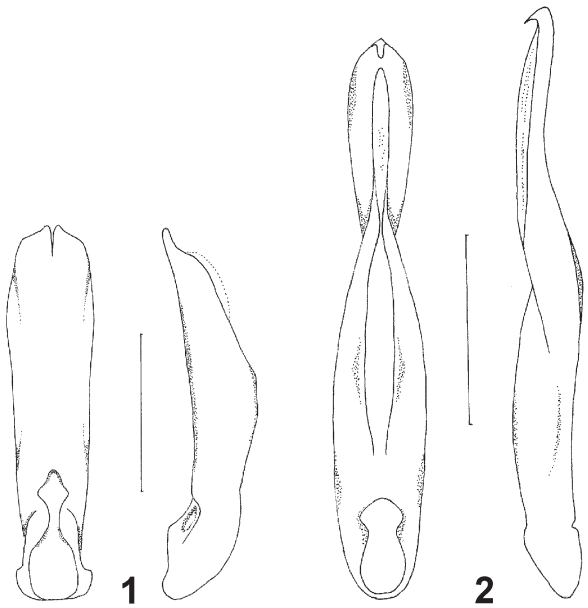
The leaf beetle genera *Calomicrus* Stephens, 1834, *Taphinellina* Maulik, 1936, *Charaea* Baly, 1878 and *Erganoides* Jacoby, 1903 are rather similar and attribution of

species to any of these genera seems to be dependant on the specialist who is involved. Beenen (1992) pointed in this respect to the species *Luperus* (*Calomicrus*) *minutus* Joannis, 1865 that had to be included in *Taphinellina* although it had been attributed to *Luperus* (*Calomicrus*) by Joannis (1865), Weise (1886), Ogloblin (1936) and Medvedev (1982) and *Exosoma* by Gressitt & Kimoto (1963).

Before the genera *Calomicrus*, *Taphinellina, Charaea* and *Erganoides* will be redefined, some attention must be given the erroneous use of *Exosoma* Jacoby, 1903. The type species of the genus *Exosoma* is *Chrysomela lusitanica* Linnaeus, 1769. This genus is well delimited by Laboissière (1934). It is characterized by the separation of the front coxae by a narrow process and antenae with second segment globose and third segment two times as long as wide. Furthermore, the hind corners of the pronotum are rounded.

Charaea and *Taphinellina* should be regarded synonyms, as Beenen (2010) proposed. *Taphinellina* is larger than *Charaea* and has underside piceous black to black, whereas the underside of *Charaea* is red-brown (Maulik, 1936). These character states cannot be used to separate these genera since some species in *Taphinellina* are smaller (for example *T. minuta*) or have parts of the underside yellow coloured (*T. flaviventris* (Motschulsky, 1861)). The name *Charaea* has priority, so all species listed as *Taphinellina* by Beenen (2010) must be classified in *Charaea*.

Differences between *Erganoides* on one hand and *Charaea* and *Calomicrus* on the other are the shorter antennal segments in *Erganoides*. The second and third are



1. *Exosoma lusitanica*: ventral and lateral side of aedaeagus, scale line 1.0 mm; 2. *Calomicrus circumfusus*. ventral and lateral side of aedaeagus, scale line 0.5 mm

more or less of the same length as the following segments. In *Charaea* and *Calomicrus* segment four is two or more times as long as the third and the following are longer than segment three too. In *Charaea* front coxal cavities are separated by an elevated prosternal process. Besides these external characters the three genera have characteristic aedaeagi for each genus. To illustrate this we depict the aedaeagi of representatives of *Exosoma* (fig. 1), *Calomicrus* (fig. 2), *Charaea* (fig. 3) and the new species of *Erganoides* (figs. 4 and 5).

DESCRIPTIONS

Erganoides pallens Beenen n. sp.

Type locality

P. R. China: Sichuan, environment Maoxian.

Type material

Holotype: ♂. China, Sichuan, env. Maoxian, 2600-3000m, 29 vi 2003, leg. S. Murzin (RBCN).

Paratypes: 6 ♀♀, same data as holotype (RBCN).

The specimens are provided with a red label: HOLOTYPUS (or PARATYPUS) *Erganoides pallens* n. sp., R. Beenen det '10.

Description

Male length: 3.00 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 1.45 mm. Female length: 2.90-3.10 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 1.50-1.70 mm. Macropterous. Colour uniformly light yellow. Tips of mandibulae brown. In some specimens the antennae slightly darkened towards apex.

Head: maximal width of head across the eyes: 0.65-0.90 mm. Upper surface impunctate; vertex shining. Frontal tubercles transverse; shining. Antennal segments 4 to 11 pubescent. First three antennal segments with few erect hairs. Antennal formula in male: 6-3-4-5-5-5-5-5-6-6-8; in female: 6-4-5-6-6-6-6-6-6-6-7.

Pronotum: maximal width: 0.90-1.05 mm. Maximal length in the middle: 0.55-0.68 mm. Greatest width in middle. Sides rounded in anterior half; slightly narrowing towards base. Upper surface with sparse shallow punctures; because of shallow reticulation less shining than vertex. Anterior border unmargined, lateral and basal border margined.

Scutellum: triangular; impunctate; shining.

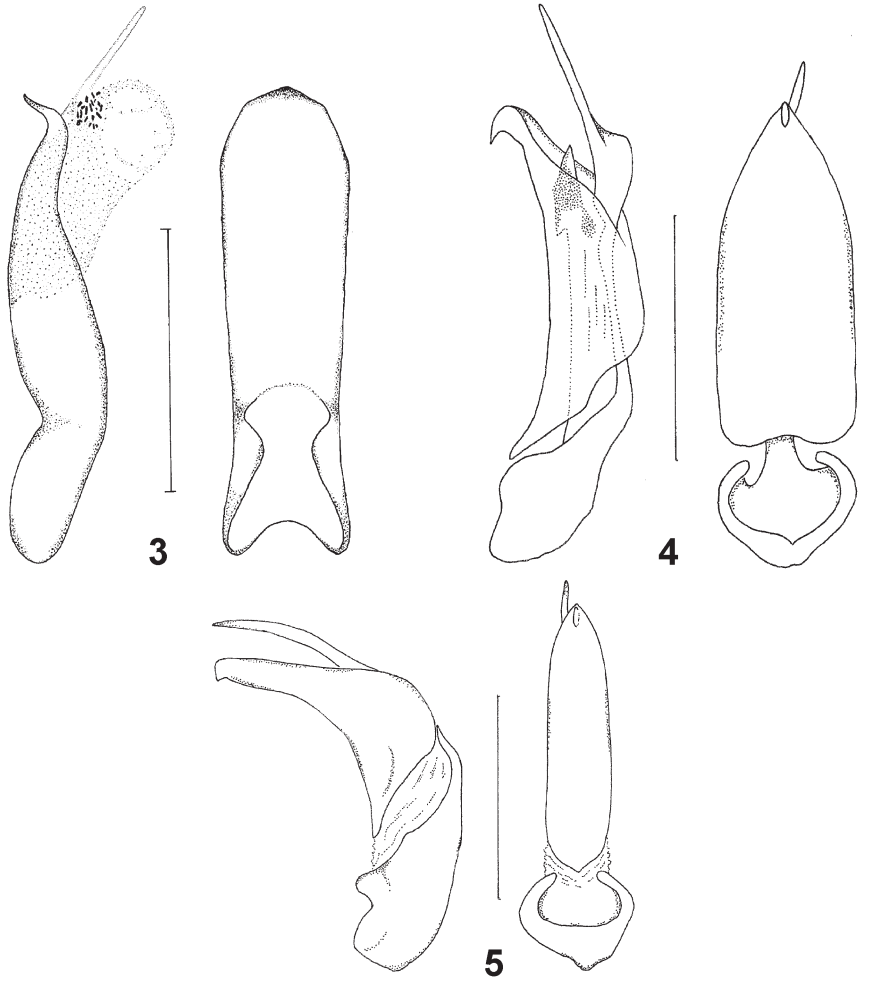
Elytra: Much broader at the base than the prothorax with definite shoulders. Upper surface with shallow punctures and erect hairs. Greatest width just behind the middle. Elytral epipleura even, wide at base, parallel until base of the metasternum, subsequently gradually narrowing to almost disappearing at apex.

Underside: Procoxal cavities closed posteriorly. Procoxae separated by a very narrow process. Mid coxae separated by a process less wide than ¼ of coxa's diameter.

Legs short; all tibiae with a spur at apex. First segment of tarsus of front legs in the male widened. Claws appendiculate.

In the male the last abdominal sternite trilobed, with middle lobe rounded and protruding.

Aedaeagus: Basal part and apical part of aedaeagus connected by membranes. Basal part with a sclerotized extension protruding from the ostium. In side view the apical part is only slightly curved; the apex has a large hook. In ventral view the basal part is wide, the basal two third parallel, in apical third tapering towards the tip (fig. 4).



3. *Charaea minuta*: left lateral side of aedaeagus, with partly everted internal sac and ventral side of aedaeagus; 4. *Erganoides pallens* Beenen n. sp.: left lateral and ventral side of aedaeagus; 5. *Erganoides tsoui* Lee & Beenen n. sp.: left lateral and ventral side of aedaeagus; Scale line 0.5 mm

Diagnosis

The complete light yellow colour of this species makes it unique among the species with minute elytral punctation. Some specimens of *Erganoides capito* (Weise, 1889) can also be yellow but in this species always some parts are darkened. Futhermore *E. capito* is larger.

Etymology

The new species is named after the light yellow colour.

Distribution

The species is known only from the type specimens that have been collected in Sichuan.

Erganoides tsoui Lee & Beenen n. sp.

Type locality

Taiwan, Taoyuan, Paling.

Type material

Holotype: ♂. Taiwan, Taoyuan, Paling, 19 iv 2009, leg. M. H. Tsou (TARI).

Paratypes: 1 ♂, 2 ♀♀, same data as holotype (RBCN); 1♂, 15♀♀, same data as holotype (TARI); 4 ♂♂, 1 ♀, same locality, 21 iii 2010, leg. M. H. Tsou (TARI).

The specimens are provided with a red label: HOLOTYPUS (or PARATYPUS) *Erganoides tsoui* n. sp„ det. C. F. Lee & R. Beenen ’10.

Description

Male length: 3.10-3.15 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 1.50 mm. Female length: 3.20-3.55 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 1.55-1.70 mm. Macropterous. Main body color yellow; metathorax, abdomen and upper parts of vertex dark brown. Scutellum and tips of mandibulae brown.

Head: maximum width of head across the eyes: 0.75-0.80 mm. Upper surface impunctate, shining. Frontal tubercles transverse; shining. Antennal segments 3 to 11 pubescent. First two antennal segments with few erect hairs. Antennal formula in male: 5-3-3-3-3-3-3-3-3-3-5; in female: 5-2-2-3-3-3-3-3-3-3-5.

Pronotum: maximal width: 1.00-1.13 mm. Maximum length in the middle: 0.70-0.80 mm. Greatest width in middle. Sides regularly rounded. Upper surface impunctate, shining. Anterior border unmargined, lateral and basal border margined.

Scutellum: triangular; impunctate; shining.

Elytra: Much broader at the base than the prothorax with definite shoulders. Upper surface with regularly placed punctures and erect hairs. Greatest width just behind the middle.

Elytral epipleura even, wide at base, parallel until base of the metasternum, subsequently gradually narrowing to almost disappearing at apex.

Underside: Procoxal cavities open posteriorly. Procoxae separated by a very narrow process. Mid coxae separated by a process less wide than ¼ of coxa's diameter. Legs short; all tibiae with a spur at apex. First segment of tarsus of front legs in the male widened. Claws appendiculate.

In the male the last abdominal sternite trilobed; middle lobe truncate.

Aedaeagus: Basal part and apical part of aedaeagus connected by membranes. Basal part with a scleritized extension protruding from the ostium. In side view the apical part is strongly curved giving it a rectangular look; the apex has a very small hook. In ventral view the basal part is almost parallel and narrow; In apical fifth tapering towards tip (fig. 5).

The specimens from the type series do not show variation in colour. Living specimens are differently coloured as can be seen from fig. 6.

Diagnosis

This species is similar to both *E. suturalis* Gressitt & Kimoto, 1963 and *E. occipitalis* Laboissière, 1940. It differs from them in colour of elytron, as in both these species at least the sutural margin is brown. It differs from *E. pallens* Beenen n. sp. in the dark upper part of the vertex and dark metathorax and abdomen. Furthermore the punctures of elytra are stronger in *E. tsoui* Lee & Beenen n. sp. The aedaeagal form of *E. tsoui* Lee & Beenen n. sp. (fig. 5) is strongly curved in which it essentially differs from the aedaeagus of *E. pallens* Beenen n. sp. (fig. 4).

Habitat and host plant

The type specimens have been collected from *Indigofera venulosa* Champ. ex Benth., 1852 (Leguminosae), where the beetles apparently consumed parts of the leaves (fig. 6). The collecting place is situated along a trail in a deciduous forest at an altitude of 600 m (fig. 7).

Etymology

The new species is named in honour of Mr. Mei-Hua Tsou who collected the type specimens.

Distribution

The species is known only from the type specimens that have been collected in Taoyuan County.

DISCUSSION

The state of the front coxal cavities (open, closed or nearly closed) is often used to separate genera, since Laboissière (1934) stressed the importance of this character. Recently it became clear that different states of this character can occur within a single genus. Beenen (2008) showed that in *Cerophysa* Chevrolat, 1836 some differences occur. Reid & Nally (2008) showed that both open and closed front coxal cavities occur within the genus *Menippus* Clark, 1864. Also in *Erganoides* we found different

6. *Erganoides tsoui* Lee & Beenen n. sp. on a leaf of *Indigofera venulosa.* Photograph: Mei-Hua Tsou; 7. Type locality of *Erganoides tsoui* Lee & Beenen n. sp. at Taoyuan, Paling. Photograph: Mei-Hua Tsou

states of the front coxal cavities. According to other characters, especially the complex form of the aedaeagus, the species presented here clearly belong to *Erganoides* although *Erganoides tsoui* Lee & Beenen n. sp. shows open front coxal cavities whereas *E. pallens* Beenen n. sp shows closed front coxal cavities.

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