

**A new species of the genus *Perigona* Castelnau, 1835,
subgenus *Trechicus* LeConte, 1853, from Solomon Islands
(Coleoptera: Carabidae: Perigonini)**

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Abstract. A new species of the carabid genus *Perigona* Castelnau, 1835, subgenus *Trechicus* LeConte, 1853, is described from Guadalcanal Island in the Solomon Islands: *Perigona jakli* sp. nov. In body shape and surface structure it is fairly similar and, according to shape and structure of the aedeagus, probably rather related to *P. dumogae* Baehr, 2013 from Sulawesi.

INTRODUCTION

The carabid tribe Perigonini includes small, characteristically shaped beetles which occur on all continents, but are most common in tropical regions. The more or less depressed, *Trechus*- or *Tachys*-like beetles are easily identified by their elongate, conical terminal palpomeres, short frontal furrows, and the wide, depressed, pilose apical marginal channel of the elytra.

Perigona Castelnau, 1835 is the main genus of the tribe with numerous species throughout the world; most of these, however, occur in the tropics. The genus has been divided into several subgenera (see Lorenz 2005) which some authors even consider genera. The new species belongs to the subgenus *Trechicus* LeConte, 1853, which is characterized by the triangular arrangement of the apical marginal punctures of the elytra and usually also by rather short and ovoid elytra. This subgenus occurs mainly in the Oriental-Australian Region and includes there more than 30 species (Baehr 2013a, b). New Guinea is particularly rich in terms of species, but from the Solomon Islands so far a single species only was recorded (Baehr 2016). The species of the southern Oriental and the Papuan-Australian Regions have been recently revised (Baehr 2013a, b). It has been demonstrated in that paper, that the structures of the internal sac of the aedeagus are complex and very diverse, and thus offer an excellent tool for differentiation of the externally usually very similar species. Indeed, certain species are barely distinguishable without consideration of the genitalia.

As far as it has been recorded, most *Perigona* species occur in litter in more or less dense forest; therefore specimens usually are only collected by specialized sampling methods, as Berlese extraction or sifting ground litter. Most species are capable of flight, so they may be also encountered in flight intercept traps and at light. However, little more is known about habits and ecology of almost all species, with exception of the two common and widely

distributed species *P. nigriceps* (Dejean, 1831) and *P. litura* (Perrault & Montrouzier, 1864).

Within a sample of carabid beetles, collected by S. Jákl (Praha, Czech Republic), on Guadalcanal Island in the Solomon Islands and kindly given to me for examination, I found two specimens of a very small *Perigona* species that in body shape, colour, and shape and structure of the aedeagus is fairly similar to *P. dumogae* Baehr, 2013 from Sulawesi. It is the second species of *Perigona* explicitly recorded from Solomon Islands. However, it is not closely related to the other species recorded from the Solomon Islands, *P. hajeki* Baehr, 2016.

MATERIAL AND METHODS

For the taxonomic treatment, standard methods were used. 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 photograph was obtained by a digital camera using ProgRes CapturePro 2.6 and AutoMontage and subsequently was processed 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 midline. Length of elytra was taken from the most advanced part of the humerus to the most advanced part of the apex.

The holotype is stored in National Museum, Praha (NMPC), the paratype in the working collection of the author in Zoologische Staatssammlung, München (CBM).

Genus *Perigona* Castelnau, 1835

Perigona Castelnau, 1835: 151. - Lorenz 2005: 438; Baehr 2013a: 4.

Type species: *Perigona pallida* Castelnau, 1835 (by monotypy).

Diagnosis: Characterized by the *Trechus*-like body shape, but without elongate frontal furrows, by elongate and acute terminal palpomeres, and by the wide, depressed, usually pilose subapical marginal channel of the elytra.

The genus includes several subgenera, of which *Trechicus* LeConte is the largest.

Subgenus *Trechicus* LeConte, 1853

Trechicus LeConte, 1853: 386. - Lorenz 2005: 438; Baehr 2013: 50.

Type species: *Trechicus umbripennis* LeConte, 1853 (= *Bembidion nigriceps* Dejean, 1831 = *Perigona nigriceps*).

Diagnosis. Characterized by usually short and ovoid elytra and the subapical lateral setiferous punctures of the elytra which are arranged in a distinct triangle.

Perigona jakli sp. nov.

(Figs. 1, 2)

Type material. Holotype (♂) labelled: "South Pacific; SOLOMON Isl. Guadalcanal I.; 80-250m; Lunga riv. env.; 5-15 km S of Barana vill.; Honiara reg.; 20.xi-15.xii.2013; St. Jákli leg., (NMPC). Paratype (1 ♀): same data, (CBM).

Description. Measurements. Body length: 2.45-2.6 mm; width: 1.05-1.2 mm. Ratios. Width/length of pronotum: 1.49-1.50; width of widest diameter/base of pronotum: 1.22-1.24; width apex/base of pronotum: 1.02-1.04; width pronotum/head: 1.11; length/width of elytra: 1.34-1.38.

Colour (Fig. 1). Glossy black, suture of elytra narrowly pale translucent, lateral margins of pronotum and elytra not paler than disk. Labrum and mandibles pale rufous, palpi, antenna, and legs yellow.

Head (Fig. 1). Of average size, dorsal surface fairly convex, without any depression or pit in middle. Eye (in group) large and laterad far projected; orbit extremely short, barely visible. Labrum in middle straight; mandibles moderately elongate, straight; palpi elongate, maxillary palpus sparsely pilose. Mentum with acute, unidentate tooth and two elongate setae. Antenna short, median antennomeres about as wide as long. Posterior supraorbital seta situated at posterior margin of eye. Frontal furrows shallow, short, oblique. Surface impunctate, with fine, superficial, about isodiametric microreticulation that posteriad is even more fading; neck area without microreticulation, surface glossy.

Pronotum (Fig. 2). Wide, widest well in front of middle, dorsal surface rather depressed. Base rather narrow, slightly narrower than the apex. Apex slightly excised; apical angles slightly projected but widely rounded; lateral margin in basal two thirds oblique and straight, near base not concave. Basal angle more than 100°, obtusely angulate; base in middle straight, laterally

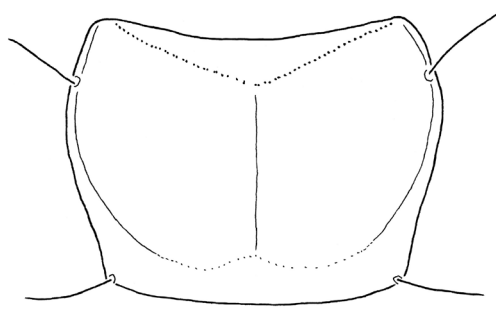


Fig. 1. *Perigona jakli* sp. nov., (body length: 2.45 mm).

Fig. 2. *Perigona jakli* sp. nov., pronotum.

slightly oblique. Both, apex and base not margined. Lateral margin and channel narrow, basad widened and deplanate. Both transverse sulci very shallow, indistinct, the basal one only in middle perceptible; median line moderately deep, abbreviated on both ends. Anterior marginal seta situated at apical fifth, posterior marginal seta situated at basal angle. Surface impunctate, with only extremely superficial traces of transverse microreticulation that is barely perceptible even at high magnification; only extremely fine near middle of apex and of base with slightly more distinct microreticulation; surface very glossy.

Elytra (Fig. 1). Rather short and wide, widest slightly behind middle, rather reversely oviform, dorsal surface fairly convex. Humerus wide, slightly produced but widely rounded, lateral margin gently convex, apex obliquely convex and slightly incurved towards the suture. Marginal channel narrow, margin behind humerus extremely finely denticulate and sparsely setulose; subapical sulcus moderately wide. Striae barely recognizable, only traces of two or three median striae just perceptible. Elytra tripunctate, the anterior discal puncture situated slightly behind the basal third, and attached to the 3rd stria, the median puncture located behind middle and situated between the 2nd and 3rd striae, the posterior puncture far above the apex, attached to the 2nd stria. Surface impunctate, without microreticulation, very glossy.

Lower surface. All thoracic and abdominal sterna with sparse but fairly elongate pilosity that is inclined posteriad. Metepisternum slightly < 1.5 x as long as wide.

Legs. Of average size and shape. Two basal tarsomeres of male protarsus with sparse, biseriate pilosity underneath.

Male genitalia (Fig. 3). Genital ring rather wide, somewhat oval-shaped, with wide, asymmetric, obliquely convex apex and very narrow base. Aedeagus compact, wide in middle; lower surface almost straight, apicad slightly pointed down. Apex short, convexly triangular, tip obtusely rounded, almost symmetric. Internal sac with several narrow, straight or slightly coiled sclerotized rods. Both parameres large and rather short, with convexly triangular apex.

Female gonocoxites. Very similar to those of *P. drumonti* Baehr (see fig.66 in Baehr, 2013): gonocoxite 1 large, without any setae at the apical rim. Gonocoxite 2 triangularly curved, with slightly obtuse apex; with one elongate ensiform seta in middle of the ventro-lateral margin, a large ensiform seta in middle of the dorso-median margin, and two attached nematiform setae originating from a groove at apical third of the median margin.

Variation. Some variation noted in body size and distinctness of the internal elytral striae. The slightly shorter and wider elytra in the female probably depend on sexual variation.

Differential diagnosis. A small (in subgenus), black species, characterized by very weak elytral striae and the inconspicuous, rufous suture, and distinguished from all similarly shaped and coloured species of *Trechicus* recorded from Sulawesi, the Moluccas, New Guinea and the Bismarck Archipelago, by smaller body size and the differently structured aedeagus.

Relationships. With respect to shape and structure of the aedeagus most similar to *P. dumogae* Baehr, 2013 and *P. punctatostriata* Baehr, 2013 from Sulawesi, although the structure of the internal sac is different. Moreover, the latter species is considerably larger

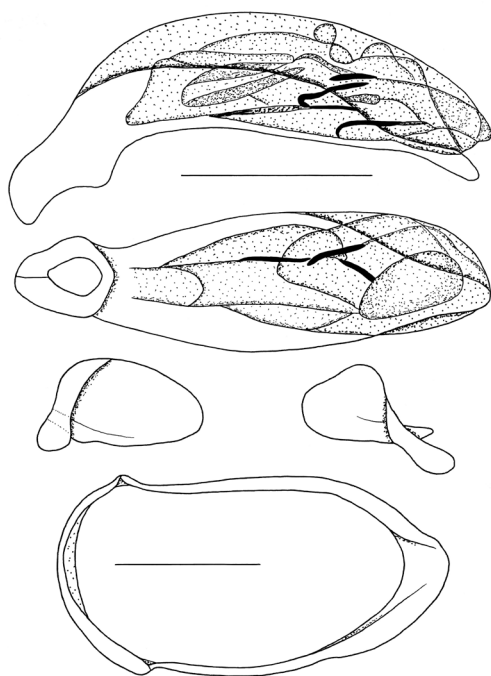


Fig. 3. *Perigona jakli* sp. nov., male genitalia, left side and lower surface, left and right parameres, genital ring. Scale bars: 0.25 mm.

and has well developed and distinctly punctate elytral striae, whereas *P. dumogae* is but slightly larger, but has a wider pronotum with narrower apex and shorter elytra.

Distribution. Guadalcanal, Solomon Islands. Known only from the type locality.

Etymology. The name is a patronym in honour of the collector, Stanislav Jákł (Praha, Czech Republic).

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REMARKS

Perigona jakli is the second species of the genus *Perigona* recorded from Solomon Islands. However, it is very probable that at least the common and widespread species *P. nigriceps* (Dejean, 1831) and/or *P. litura* Perrault et Montrouzier, 1864 occur on this island group, but have not yet been explicitly recorded. And the very rich *Perigona* fauna of New Guinea (see Baehr 2013a) suggests the occurrence of several additional species on Solomon Islands.

Although *P. jakli* belongs to the same subgenus as the single other described species from Solomon Islands, namely *P. hajeki* Baehr, 2016, both species are not closely related and belong to different subgroups within the subgenus. *P. jakli* probably is related to *P. dumogae* Baehr, 2013 from Sulawesi, according to body shape, surface structure and shape of the aedeagus and structure of the internal sac.

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REFERENCES

- BAEHR M. 2013a: The species of the genus *Perigona* Castelnau from New Guinea, Sulawesi, Halmahera, and Australia, and of the *parvicollis-pygmaea*-lineage. (Coleoptera, Carabidae, Perigonini). *Entomologische Blätter und Coleoptera* 109: 1-132.
- BAEHR M. 2013b: Supplement to “The species of the genus *Perigona* Castelnau from New Guinea, Sulawesi, Halmahera, and Australia, and of the *parvicollis-pygmaea*-lineage. (Coleoptera, Carabidae, Perigonini)” and to “The *Dolichoctis striata* complex (Coleoptera, Carabidae, Lebiini)”. *Entomologische Blätter und Coleoptera* 109: 223-232.
- BAEHR M. 2016: A new species of the genus *Perigona* Castelnau, 1835, subgenus *Trechicus* LeConte, 1853, from Solomon Islands (Insecta, Coleoptera, Carabidae, Perigonini). *Studies and Reports, Taxonomical Series* 12: 1-6.
- CASTELNAU F. L. de, 1835: Études Entomologiques, ou Description d’Insectes Nouveaux et Observations sur leur Synonymie. Première partie. *Méquinon-Marvis, Paris*: 95-159.
- LECONTE J. L. 1853: Notes on the classification of the Carabidae of the United States. *Transactions of the American Philosophical Society* 10: 363-403.
- LORENZ W. 2005: *Systematic List of extant Ground Beetles of the World (Insecta Coleoptera “Geadephaga”:* *Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodidae)*. 2nd Ed. Tutzing: printed by the author, 530 pp.

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