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A new species of the genus *Perigona* Castelnau, 1835, subgenus *Trechicus* LeConte, 1853, from the 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 in the Solomon Islands: *Perigona hajeki* sp. nov. It is very similar and certainly closely related to *P. drumonti* Baehr, 2013 from New Guinea and is mainly distinguished by the structure of the internal sac of the aedeagus.

INTRODUCTION

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

Perigona Castelnau, 1835 is the main genus of the tribe with numerous species spread throughout the world; most of these, however, occur in the tropics. The genus was 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 its 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 2013). New Guinea is particularly rich in terms of species, but from the Solomon Islands, it has not yet been recorded. The species of the southern Oriental and Papuan-Australian Regions were recently revised (Baehr 2013a, b). In that paper it was demonstrated that the structures of the internal sac of the aedeagus are complex and very diverse, and thus offer an excellent tool for the differentiation from externally usually very similar species. Indeed, certain species are barely distinguishable without consideration of the genitalia.

Most *Perigona* species occur in litter in more or less dense forest, as far as it has been recorded; therefore specimens usually are collected by specialized sampling methods only, such as the Berlese extraction or sifting ground litter. Most species are capable of flight, so they are 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 et Montrouzier, 1864).

Within a sample of carabid beetles, collected by J. Hájek of the Natural History Museum, Prague, on Guadalcanal in the Solomon Islands and kindly given me for examination, I found a small series of a *Perigona* species that in body shape and colour was extremely similar to *P. drumonti* Baehr, 2013 from New Guinea. Examination of the male genitalia demonstrated that it is a closely related but different species. It is also the first species of *Perigona* explicitly recorded from the Solomon Islands.

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 worked with Corel Photo Paint X4.

Measurements were taken using a stereo microscope with an ocular micrometer. The body length was measured from the apex of the labrum to the apex of the elytra. The pronotum length was measured along the midline. The elytra length was taken from the most advanced part of the humerus to the most advanced part of the apex.

The types are stored in Natural History Museum, Prague (NHMP), a paratype is located in the working collection of the author in Zoologische Staatssammlung, München (CBM).

Genus *Perigona* Castelnau, 1835

Perigona Laporte de 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, elongate and acute terminal palpomeres, and wide, depressed, usually pilose subapical marginal channel of the elytra. The genus includes several subgenera, of which *Trechicus* LeConte is the largest one.

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 subapical lateral setiferous punctures of the elytra which are arranged in a distinct triangle.

Perigona hajeki sp. nov.

(Figs. 1-2)

Type material. Holotype (♂) labeled: Solomom Island, Guadalcanal ca 3.5 km SE of Barama vill. (clearing in secondary forest at light) 09°28.8'S, 159°59.5'E, 190 m, Jiři Hájek leg. 24.xi.-14.xii.2013, (NHMP). Paratypes: (3 ♂♂, 1 ♀): same data (NHMP, 1 ♂ CBM).

Description. Measurements. Body length: 3.5-3.95 mm; width: 1.5-1.75 mm. Ratios. Width/length of pronotum: 1.37-1.40; width of widest diameter/base of pronotum: 1.21-1.25; width apex/base of pronotum: 0.90-0.94; width pronotum/head: 1.20-1.25; length/width of elytra: 1.34-1.39.

Colour (Fig. 1). Glossy black, margin of elytra narrowly and inconspicuously paler translucent, lateral margins of pronotum not paler than disk. Labrum, mandibles, and antenna reddish-piceous, palpi red, legs dark piceous, only tarsi faintly paler.

Head (Fig. 1). Of average size, dorsal surface fairly convex. Eye (in group) comparatively large but laterad not much projected; orbit short, oblique. Labrum in middle straight; mandibles elongate, straight; palpi elongate, maxillary palpus sparsely pilose. Mentum with acute, unidentate tooth and two elongate setae. Antenna comparatively elongate, median antennomeres c. 1.3 x as wide as long. Posterior supraorbital seta situated slightly behind posterior margin of eye. Frontal furrows shallow, fairly elongate, curved. Frons in middle with a very shallow, inconspicuous pit. Surface apparently impunctate, in anterior half with fine, slightly superficial, about isodiametric microreticulation that posteriad changes into even less distinct, rather transverse meshes; neck area without microreticulation, surface glossy.

Pronotum (Fig. 1). Moderately wide, widest slightly in front of middle, dorsal surface rather depressed. Base wide, considerably wider than apex. Apex faintly excised; apical angles barely projected,

Fig. 1. *Perigona hajeki* sp. nov. (Body length: 3.7 mm).

widely rounded; lateral margin in apical two thirds gently convex, in basal third slightly oblique and straight, near base faintly concave. Basal angle little more than 90°, angulate though at tip slightly obtuse; base in middle straight, laterally slightly oblique. Both, apex and base not margined. Lateral margin and channel narrow, basad widened and deplanate. Anterior transverse sulcus barely perceptible, posterior sulcus shallow, indistinct, only in middle perceptible; median line deep, abbreviated on both ends, but basally widened to a slightly elongate pit. Anterior marginal seta situated at or slightly in front of apical fifth, posterior marginal seta situated at basal angle. Surface impunctate, without microreticulation except for extremely fine and superficial transverse lines near middle of apex and of base, 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 very finely denticulate and sparsely setulose; subapical sulcus moderately wide. Striae barely recognizable, only parts 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, the posterior puncture far above the apex, both latter punctures attached to the 2nd stria. Surface impunctate, without microreticulation, very glossy.

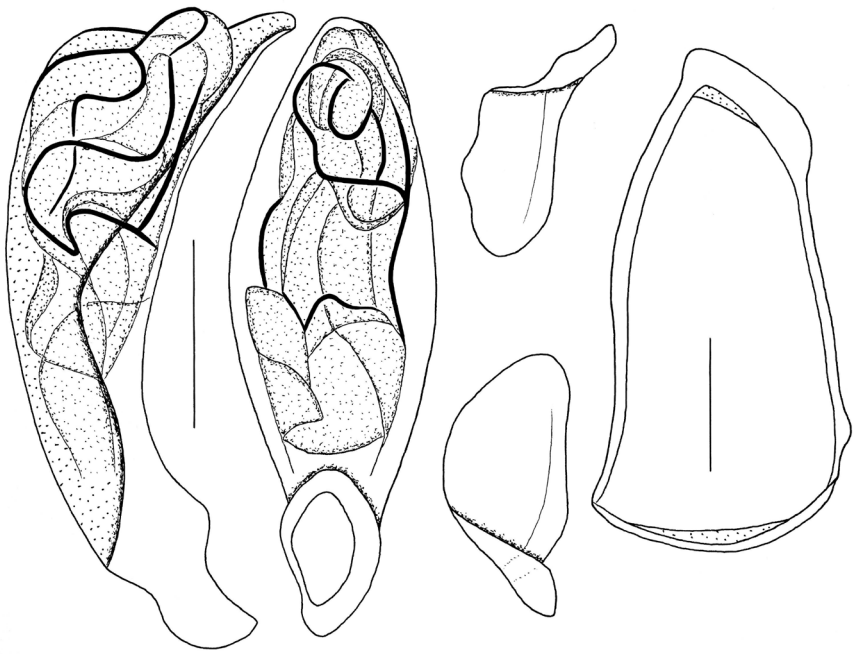

Fig. 2. *Perigona hajeki* sp. nov. Male aedeagus, left side and lower surface, left and right parameres, genital ring. Scale bars: 0.25 mm.

Lower surface. All thoracal and abdominal sterna with sparse but fairly elongate pilosity that is inclined posteriad. Metepisternum ca. 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. 2). Genital ring moderately wide, slightly triangular, with wide, asymmetric, obliquely convex apex and very narrow base. Aedeagus very compact, very wide in middle; lower surface almost straight, apicad slightly pointed down. Apex short, convexly triangular, tip obtusely rounded, almost symmetric. Internal sac with many narrow, variously coiled sclerotized rods. Both parameres large and elongate, 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. Apart from some variation of body size and shape of the elytra, very little variation noted. The difference in the shape of the elytra seems to be sexual, because only the single female has decidedly wider, shorter, and more oviform elytra than the four males**.**

Differential diagnosis. A comparatively large species (in subgenus), distinguished from all species of *Trechicus* recorded from New Guinea and the Bismarck Archipelago, except *P. drumonti* Baehr, 2013, by the little cordiform prothorax which has a markedly wide basis. Distinguished from that species by slightly wider pronotum with slightly narrower base, slightly longer elytra, and a different structure of the internal sac of the aedeagus.

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

Collecting circumstances. Sampled at light in "clearing in secondary forest".

Relationships. Together with *P. drumonti* Baehr from New Guinea, this species is outstanding in its narrow, little cordiform prothorax with a comparatively wide base. According to the body shape, colour, and shape of the aedeagus it is very similar to *P. drumonti* and is mainly distinguished by the different structure of the internal sac, *i.e.* the different arrangement of the various thin, sclerotized, coiled rods.

Etymology. The name is a patronym in honour of the collector, Jiři Hájek from Natural History Museum, Prague.

Tab. 1. Comparison of measurements and ratios of *P. drumonti* Baehr, 2013 and *P. hajeki* sp. nov. N - number of measured specimens; l - body length in mm; w/l pr - ratio width/length of pronotum; d/b pr - ratio width widest diameter/base of pronotum; a/b pr - ratio width of apex/base of pronotum; pr/h - ratio width pronotum/head; l/w el - ratio length/width of elytra.

	N	l	w/l pr	d/b pr	a/b pr	pr/h	l/w el
drumonti	6	3.4-3.7	1.42-1.44	1.15-1.17	0.87-0.89	1.21-1.25	1.31-1.34
hajeki	5	3.5-3.95	1.37-1.40	1.21-1.25	0.90-0.94	1.20-1.25	1.34-1.39

REMARKS

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

The very close relationship of *P. hajeki* and *P. drumonti* once more demonstrates the close relations of the Carabid fauna of the Solomon Islands to that of New Guinea and the Bismarck Archipelago and corroborates the membership of the fauna of Solomon Islands to the Papuan biogeographical Region.

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