

**A new species of *Dolichoctis* SCHMIDT-GÖBEL, 1846,  
subgenus *Spinidolichoctis* BAEHR, 1999, from New Britain  
(Papua New Guinea)  
(Coleoptera: Carabidae: Lebiini)**

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**Abstract**

A new species of the lebiine genus *Dolichoctis* SCHMIDT-GÖBEL, 1846 (Coleoptera: Carabidae: Lebiini), *D. ludewigi*, is described from the island of New Britain, Bismarck Archipelago (Papua New Guinea). It belongs to the subgenus *Spinidolichoctis* BAEHR, 1999 and is outstanding within this subgenus due to the presence of an anterior supraorbital seta. From the two described species, *D. bisetosa* BAEHR, 1999 and *D. bisetosiceps* BAEHR, 2013, which bear the same setae, it is distinguished by the combination of the following character states: moderately produced eye, different shape and structure of pronotum, elongate elytral apical spine, and shallow elytral striae. The new species is added to the most recent key to the subgenus *Spinidolichoctis* BAEHR, 1999.

**Key words:** Coleoptera, Carabidae, Lebiini, *Dolichoctis*, Papua New Guinea, New Britain, new species.

**Introduction**

The lebiine genus *Dolichoctis* SCHMIDT-GÖBEL, 1846 is distributed from India and Nepal in the northwest through the whole of tropical Asia to Japan in the east, and it covers the Indonesian and Philippine insular belts, New Guinea, the Bismarck Archipelago, Solomon Islands, and north-eastern Australia. BAEHR (1999) revised the species occurring in New Guinea and surrounding areas and described additional new species and communicated additional records (BAEHR 2003a, b, 2006, 2007, 2013c, 2015) from this region and from Australia. BAEHR (1999) described two subgenera, *Spinidolichoctis* BAEHR, 1999 and *Papuadolichoctis* BAEHR, 1999, for species with spinose or at least angulate elytral apex. BAEHR (2013a, b) partly revised the nominate subgenus, i.e. those species which are related to the type species *Dolichoctis striata* SCHMIDT-GÖBEL, 1846.

*Dolichoctis* is extremely speciose in the Papuan Subregion, where the subgenera *Spinidolichoctis* and *Papuadolichoctis* dominate. The spineless species of the subgenus *Dolichoctis* s.str., however, are but sparsely represented in the Papuan Subregion, as well as in Australia. In the Oriental Region the genus includes numerous species of the nominate subgenus, and those species groups, which have not yet been revised, certainly would merit a thorough revision like the New Guinean and Australian ones and those of the *D. striata* complex.

Specimens of *Dolichoctis*, including those of the subgenus *Spinidolichoctis*, preferably inhabit tropical rain forest where they have been sampled from the bark of logs, by fogging logs and standing trees, and at light. They seem to belong to the commonest carabid species in their habitats, but nevertheless little is known about their actual habits and almost nothing about diet and reproduction.

Until present, 84 species and subspecies of the nominate subgenus were described, 35 species of the subgenus *Spinidolichoctis*, and eight species of the subgenus *Papuadolichoctis* (LORENZ 2005, BAEHR 2013a, c, 2015). Most species of *Spinidolichoctis* and all species of *Papuadolichoctis* occur in the Papuan Region.

The new species was collected and kindly given to me by my friend Hans-Helmut Ludewig (Mainz, Germany), together with a couple of other carabid species. Although it is a single specimen, it is described herein, because it is outstanding in its structure and quite different from *Dolichoctis bisetosa* BAEHR, 1999 and *D. bisetosiceps* BAEHR, 2013, as well as from the single other species of *Spinidolichoctis* recorded from New Britain, *D. weigeli* BAEHR, 2006.

### Material and methods

The holotype of the new species is stored in the working collection of the author in the Zoologische Staatssammlung, München, Germany (CBM-ZSM).

In the taxonomic survey standard methods are used. The habitus photographs were obtained by a digital camera using ProgRes CapturePro 2.6 and AutoMontage and subsequently were worked with Corel Photo Paint 14.

Measurements were taken using a stereo microscope with an ocular micrometer. Body length was measured from apex of labrum to apex of elytra including the apical spines, length of pronotum along midline, length of elytra from the most produced part of the humerus in a straight line to the most produced part of the apex.

### Genus *Dolichoctis* SCHMIDT-GÖBEL, 1846

*Dolichoctis* SCHMIDT-GÖBEL, 1846: 62. – BAEHR 1999: 124; 2013a: 135; 2013c: 150; 2015: 223.

TYPE SPECIES: *Dolichoctis striata* SCHMIDT-GÖBEL, 1846, by monotypy.

DIAGNOSIS: The genus combines species of very different shape and structure that either are unicolourous or are coloured and patterned in different ways; that possess unarmed, or angulate, or even spined elytra; and may lack certain ambulatory setae on head and pronotum. But they are always characterized by the absence of the mental tooth; denticulate tarsal claws; invariable presence of only two tiny setiferous punctures on the 3<sup>rd</sup> interval; and commonly the internal sac of the aedeagus is rather simply structured. Both latter characters distinguish the genus from the similarly shaped Indo-Australian genus *Coptodera* DEJEAN, 1825.

In view of the combination of certain common special characters, BAEHR (1999) distinguished two additional subgenera, *Spinidolichoctis* and *Papudadolichoctis*, which both occur mainly in the Papuan-Australian Region with few species occurring as far north-west as Sulawesi and the Moluccas.

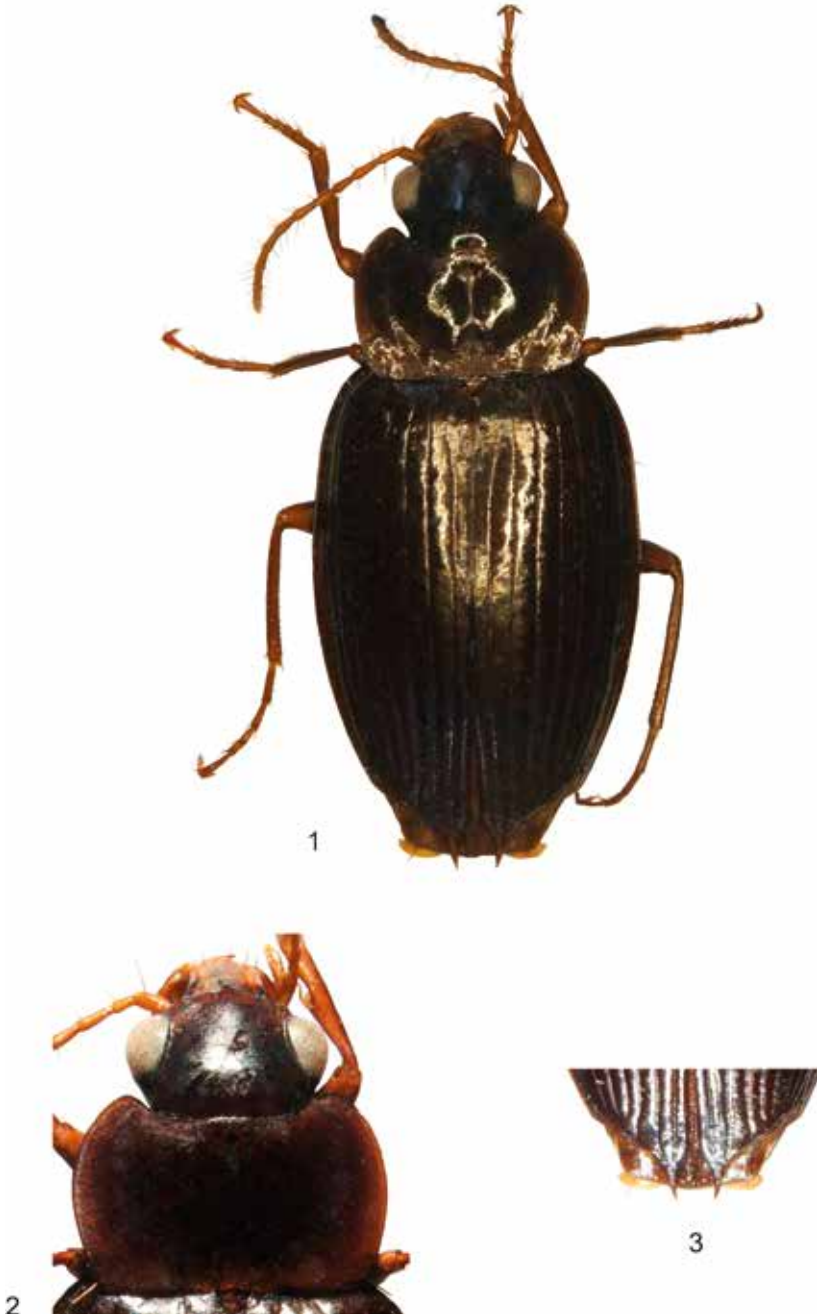
### Subgenus *Spinidolichoctis* BAEHR, 1999

*Spinidolichoctis* BAEHR, 1999: 129. – BAEHR 2003a: 4; 2003b: 16; 2006: 39; 2007: 79; 2013c: 150; 2015: 225; LORENZ 2005: 459.

TYPE SPECIES: *Dolichoctis aculeata* CHAUDOIR, 1869, by original designation.

DIAGNOSIS: Labrum 6-setose; palpi of moderate length, finely and sparsely pilose; mentum edentate; head with two supraorbital punctures, but usually the anterior one without seta; pronotum with two marginal setae on either side, the anterior one situated at the widest diameter, the posterior at or just in front of the basal angle; elytra with complete striation; 3<sup>rd</sup> interval with two fine punctures and very short setae; apex of the elytra dentate or spinose; latero-apical angles of the elytra usually dentate; metathoracic wings fully developed; prosternum, meso-, and meta-ventrites with short erect pilosity; abdomen impilose; metepisternum elongate, usually ca. twice as long as wide; legs slender and elongate, in particular the posterior ones; tarsal claws distinctly denticulate, usually with four teeth; 1<sup>st</sup>–3<sup>rd</sup> tarsomeres of male protarsus at apex biserially squa-

mose; terminal abdominal sternum in males bisetose, in females quadrisetose; male genital ring convexly triangular; female gonocoxite 1 asetose at apical rim, gonocoxite 2 with one elongate dorso-median and two elongate ventro-lateral ensiform setae, but without any nematiform setae.



Figs. 1–3: *Dolichoctis ludewigi*, 1) habitus (body length 5.9 mm), 2) head and pronotum, 3) elytral apex.

***Dolichoctis ludewigi* sp.n.**

(Figs. 1–4, Tab. 1)

TYPE MATERIAL: **Holotype** ♂ (CBM-ZSM): “New Britain, no.19 Keravat, KT83 06.2004 leg. Ludewig”.

**DIAGNOSIS:** Characterized by the presence of the anterior supraorbital seta, which distinguishes the species from all other species of the subgenus, except *D. bisetos* BAEHR, 1999 from the western part of New Guinea, and *D. bisetosiceps* BAEHR, 2013 from Goodenough Island at the eastern margin of New Guinea. From the first species distinguished by less protruded eye, narrower and barely explanate lateral margin of pronotum, and shallower elytral striae with almost depressed intervals; from the latter species by lesser body size, different shape of the pronotum with wider base, and longer apical elytral spines.

**DESCRIPTION:** Measurements. Length: 5.9 mm; width: 2.5 mm. Ratios. Width/length of pronotum: 1.84; width base/apex of pronotum: 1.38; width pronotum/head: 1.56; length/width of elytra: 1.60; length elytra/pronotum: 4.0.

Colour (Fig. 1). Dark piceous to almost black, margins of pronotum slightly but indistinctly paler translucent, lateral margin of elytra narrowly and very inconspicuously paler. Mandibles and margins of clypeus and labrum rufous, palpi pale rufous, legs brown, apex tarsi and tibiae in part rufous. Apical spine of elytra dark piceous. Ventral surface dark piceous, in middle rufopiceous.

Head (Figs. 1–2). Generally as in related species of the subgenus. Labrum elongate, apex convex. Frons only close to the clypeal suture on either side with a shallow and short, impression. Eye rather large, but not semicircular, laterad moderately protruded, orbit fairly short, oblique. Neck rather wide, dorsally not impressed. Both supraorbital setae present, the puncture of the anterior seta large. Antenna just surpassing base of pronotum, median antennomeres ca.  $1.5 \times$  as long as wide. Surface without perceptible microreticulation except on clypeus and labrum, with fine sparse punctures, glossy.

Pronotum (Figs. 1–2). Wide, depressed, with wide base. Lateral margin in apical half evenly convex, in basal half oblique and straight, near base not concave. Apex deeply excised, apical angles produced but evenly rounded. Basal angles obtusely rounded, base straight, laterally obliquely convex. Apex only laterally indistinctly margined, base not margined. Both transverse sulci shallow, the posterior one barely indicated. Median line fairly impressed, almost reaching apex and base. Basal grooves very inconspicuous, barely detectable. Lateral explanation very narrow, only near base slightly widened, little explanate. Anterior lateral seta absent, posterior seta situated at basal angle. Disk without perceptible microreticulation except near base, where it is composed of fine transverse lines; also with sparse, very fine punctures; surface glossy but not iridescent.

Elytra (Figs. 1, 3). Rather elongate, dorsally but moderately convex, near apex with a shallow, transverse depression, oval-shaped, widest in middle, lateral margins almost evenly convex. Lateral apical angle angulate, sutural angle slightly dehiscent, with moderately elongate, acute apical spines. Striation complete, striae impressed, not crenulate, becoming deeper in apical third; intervals in basal part almost depressed, in apical third more convex, apparently impunctate. Two very fine discal punctures situated behind middle and at apical fifth. The anterior puncture situated in middle of 3<sup>rd</sup> interval, the posterior one near 2<sup>nd</sup> stria. Surface with very fine, rather superficial, very regular transverse lines, and with very fine scattered punctures, rather glossy but not iridescent. Metathoracic wings fully developed.

Ventral surface. Metepisternum elongate, almost twice as long as wide. Prosternum and mesoventrite with short, erect pilosity, abdomen only at base with very sparse and short pilosity, apical impunctate and impilose. Terminal abdominal sternum bisetose.

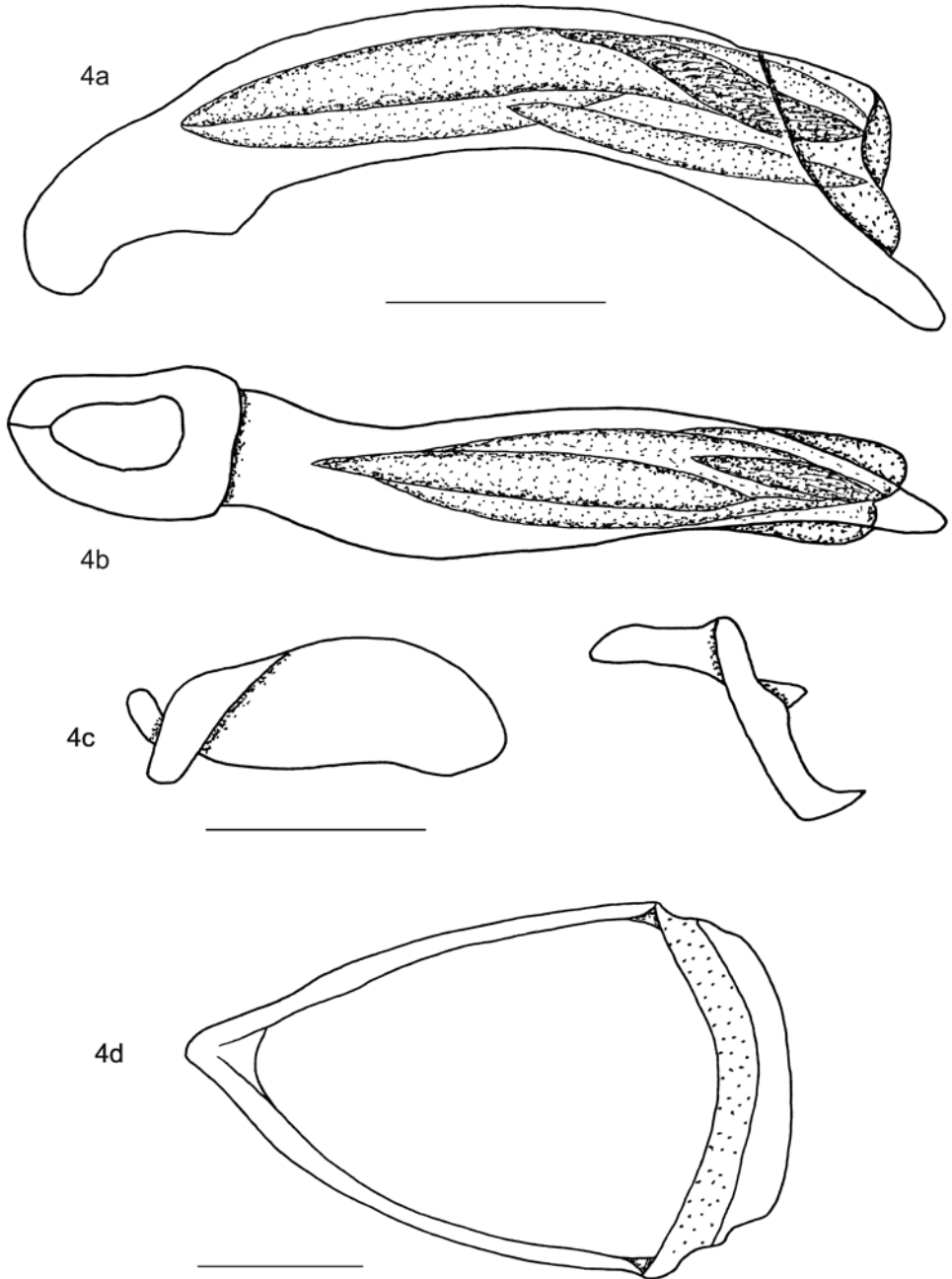


Fig. 4: *Dolichoctis ludewigi*, male genitalia: a–b: median lobe of aedeagus in a) left and b) ventral view, c) parameres, d) genital ring. Scale bars: 0.25 mm.

Male genitalia (Fig. 4). Genital ring wide, triangular, almost symmetrical, with wide, deep basal plate and triangular apex; aedeagus of average size, laterally rather sinuate, ventral surface gently concave throughout; apex moderately elongate, obtusely triangular, slightly directed to the right side; orificium short, quite symmetrical on the upper surface; internal sac rather complexly folded, with a narrow, elongate denticulate plate in the upper apical part that becomes more denticulate apicad; parameres very dissimilar, left paramere large and elongate, with obliquely rounded apex; right paramere small, somewhat axe-shaped.

Female gonocoxites. Unknown.

Variation. Unknown.

DISTRIBUTION: Papua New Guinea, New Britain. Known only from the type locality.

COLLECTING CIRCUMSTANCES: According to information provided by the collector, most probably sampled at light in or near rain forest.

RELATIONSHIPS: Uncertain. Only two other species (*D. bisetosa* BAEHR, 1999, *D. bisetosiceps* BAEHR, 2013) possess both supraorbital setae, but both are rather different in body size, shape, and structure, and occur only in or near New Guinea. The single other species recorded from New Britain, *D. weigeli*, differs in the absence of the anterior supraorbital seta and in the different shape and structure of pronotum and elytra.

ETYMOLOGY: The name is a patronym in honour of Hans-Helmut Ludewig (Mainz, Germany) who collected the species and kindly donated it to me.

Tab. 1: Summary of measurements and ratios of the bisetose species of the subgenus *Spinidolichoctis*.

N: number of specimens measured; L: length in mm; w/l pr: ratio width/length of pronotum; b/a pr: ratio width of base/width of apex of pronotum; pr/h: ratio width of pronotum/width of head; l/w el: ratio length/width of elytra; l el/pr: length elytra/pronotum.

|                     | N | L       | w/l pr    | b/a pr    | pr/h      | l/w el    | l el/pr   |
|---------------------|---|---------|-----------|-----------|-----------|-----------|-----------|
| <i>bisetosa</i>     | 6 | 5.4–6.1 | 1.73–1.78 | 1.41–1.50 | 1.52–1.57 | 1.54–1.59 | 3.84–3.98 |
| <i>bisetosiceps</i> | 1 | 7.0     | 1.70      | 1.28      | 1.38      | 1.50      | 3.90      |
| <i>ludewigi</i>     | 1 | 5.9     | 1.84      | 1.38      | 1.56      | 1.60      | 4.00      |

### Recognition

The key of BAEHR (2013c) must be altered as follows to accommodate *Dolichoctis ludewigi*:

6. Both suprorbital setae present; in the case of broken anterior seta the pore large and distinct; elytra commonly with less distinct microreticulation and with rather distinct iridescent lustre..... 7.
- Anterior supraorbital seta absent, though a small pore present; elytra usually with more distinct microreticulation and without or with less distinct iridescent lustre..... 8.
7. Body size larger (7.0 mm); apical spines of elytra short; pronotum with narrow, slightly explanate lateral margin and comparatively narrow base. South-eastern PNG: Goodenough Is. .... *bisetosiceps* BAEHR, 2013
- Body size smaller (< 6.2 mm); apical spines of elytra elongate (Fig. 3); pronotum either with wide, explanate margin, or with narrow, barely explanate margin, in latter case with rather wide base (Fig. 2) ..... 7a.

- 7a. Lateral margin of pronotum wide and markedly explanate, distinctly red translucent; elytra with distinct iridescent lustre; with rather deep striae and fairly convex intervals. Western and central New Guinea ..... *bisetosa* BAEHR, 1999
- Lateral margin of pronotum narrow and barely explanate, not distinctly translucent; elytra without distinct iridescent lustre; with shallow striae and almost depressed intervals (Fig. 1). New Britain..... *ludewigi* sp.n.

### Acknowledgements

Thanks are due to Hans-Helmut Ludewig (Mainz, Germany), who kindly donated the holotype of the new species to me.

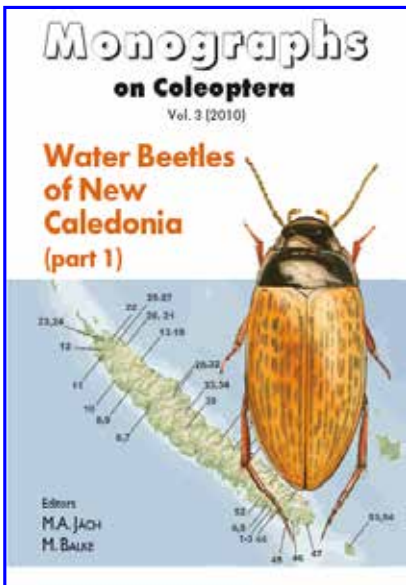
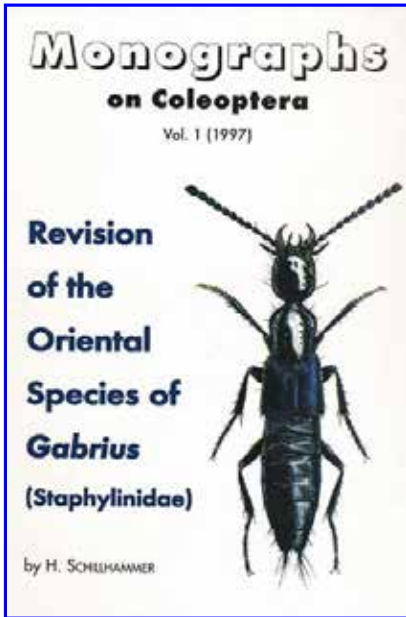
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