

# Further new species of the genus *Dolichoctis* Schmidt–Göbel from New Guinea and surrounding islands (Insecta, Coleoptera, Carabidae, Lebiinae)

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## Abstract

*Further new species of the genus Dolichoctis Schmidt–Göbel from New Guinea and surrounding islands (Insecta, Coleoptera, Carabidae, Lebiinae).*— Two new species of the carabid genus *Dolichoctis* Schmidt–Göbel from New Guinea and New Ireland are described: *D. glabripennis* of the *striata*-group (sensu Baehr, 1999) of the nominate subgenus, from New Guinea, and *D. novaeirlandiae* of the subgenus *Spinidolichoctis* Baehr, from the island of New Ireland. In New Guinea, *D. glabripennis* replaces *D. microdera* Andrewes of the Greater Sunda Islands and Moluccas that apparently does not occur in New Guinea. *D. novaeirlandiae* is the first record of a *Dolichoctis* from this island and it is outstanding due to its very short, only dentate elytra apex.

Key words: *Dolichoctis*, New species, *D. glabripennis* n. sp., *D. novaeirlandiae* n. sp., New Guinea, New Ireland.

## Resumen

*Dos nuevas especies del género Dolichoctis Schmidt–Göbel de Nueva Guinea e islas cercanas (Insecta, Coleoptera, Carabidae, Lebiinae).*— Se describen dos nuevas especies del género de carápidos *Dolichoctis* Schmidt–Göbel de Nueva Guinea y Nueva Irlanda: *D. glabripennis* del grupo *striata* (sensu Baehr, 1999) del subgénero nominal de Nueva Guinea, y *D. novaeirlandiae* del subgénero *Spinidolichoctis* Baehr, de la isla de Nueva Irlanda. En Nueva Guinea, *D. glabripennis* sustituye a *D. microdera* Andrewes de las islas de la Gran Sonda y de las Molucas, lo que aparentemente no ocurre en Nueva Guinea. *D. novaeirlandiae* constituye la primera cita de un *Dolichoctis* en esta isla y resulta excepcional por su ápice elitral muy corto y dentado.

Palabras clave: *Dolichoctis*, Nueva especie, *D. glabripennis* sp. n., *D. novaeirlandiae* sp. n., Nueva Guinea, Nueva Irlanda.

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## Introduction

Since my revision of the New Guinean species of the lebiine genus *Dolichoctis* (BAEHR, 1999) additional material from New Guinea and several neighbouring islands has accumulated that includes two new species and several new records, the latter of which are enumerated in a separate paper to be published in *Arxius de Miscel·lània Zoològica*, published by the Museu de Ciències Naturals of Barcelona. Therein, *inter alia*, the specific status of a doubtful species from the Moluccas was corroborated that was known to date only from the type series.

The new species and records are due to the sampling efforts of several collectors, namely M. Balke (Berlin, now London), O. Missa (Brussels), A. Riedel (München, now Lincoln, Nebraska), and A. Weigel (Pöbneck).

## Methods

Format and style of the descriptions, as well as measurements and ratios follow those used in my revision (BAEHR, 1999). Measurements were made under a stereo microscope using an ocular micrometer. Length was measured from apical margin of labrum to apex of elytra including the apical spines, hence, length measurements may slightly differ from those of DARLINGTON (1968). Length of prothorax was taken along midline, width of base of prothorax at position of posterior marginal seta, width of apex between the most advanced points of apex.

The full list of synonymies of the already described species may also be taken from this revision.

For dissection of the male genitalia the specimens were soaked in a wet jar overnight, the genitalia were then cleaned for a short time in hot 4% KOH. The habitus photographs were obtained using SPOT Advanced, version for Windows 3.5, and were subsequently worked using MS Corel Photo Paint 10.

Abbreviations of collections: CBM. Working collection M. Baehr, München; CWP. Collection A. Weigel, Pöbneck; IRSNB. Institut Royal des Sciences Naturelles, Bruxelles; ZSM-CBM. Zoologische Staatssammlung, München, as permanent loan in working collection M. Baehr.

## Results

### *Dolichoctis glabripennis* n. sp. (figs. 1, 2)

#### Note

This species had been noted by BAEHR (1999, p. 128) for New Guinea under the name *D. microdera* Andrewes, although some differences in shape and in structure of the surface between

the holotype of the latter species (from Sumatra) and the New Guinean specimens were noted but regarded as being due to geographic variation. In the meantime, additional material of *D. microdera* from Sumatra, Borneo, and Sulawesi was available, and during examination it became evident that the mentioned differences are substantial and, thus, the New Guinean specimens belong to a separate species that with high probability is endemic to New Guinea.

Presumably DARLINGTON (1968, p. 127) likewise included in *D. microdera* specimens of this new species that were mentioned by him from New Guinea, though *D. microdera* most probably does not occur in New Guinea. As a consequence, it should be removed from the checklist of the genus *Dolichoctis* occurring in New Guinea (BAEHR, 1999, p. 160) and be replaced by the new species. Nevertheless, *D. microdera* still occurs on Sulawesi.

#### Types

Holotype: ♂, INDONESIA or. Irian Jaya 170 km S Nabire Epomani 1,150m, 6 I 1996, leg. A. Weigel (ZSM-CBM).

Paratypes: 3♂, 1♀, same data (CBM, CWP); 2♂, INDONESIA or. Irian Jaya 50 km S Nabire Pusspensaat, 30 XII 1996 leg. A. Weigel (CBM, CWP); 1♀, Canopy mission P. N. G. Madang province Baiteta Light AR52, 20 V 1996 Leg. Olivier Missa (IRSNB).

#### Diagnosis

Easily distinguished from all other New Guinean species by the narrow pronotum bearing a narrow lateral channel. From the closely related species *D. microdera* Andrewes it differs by anteriorly wider, therefore shorter, far less coarse microreticulate pronotum, almost completely reduced elytral striation, and remarkably glabrous, non-microreticulate elytra.

#### Description

Measurements: length 4.55–5.0 mm; width 2.05–2.30 mm. Ratios: width/length of prothorax: 1.33–1.36; width base/apex of prothorax: 0.98–1.00; width prothorax/head: 1.09–1.10; length/width of elytra: 1.36–1.40; length elytra/prothorax: 3.81–3.86.

Colour (fig. 2): glossy black, only labrum, mandibles, palpi, four basal antennomeres, legs, and the narrow margin of the elytra dark yellowish, pronotum more indistinctly margined yellow. Elytra with two rather small though conspicuous, yellow spots, the anterior one situated just behind humerus between 5th or lateral part of 4th and 8th intervals, respectively, if striae and intervals were distinct. Spot about circular though medio-posteriad with a triangular extension. The circular posterior spot situated in apical third of elytra between 2nd–5th intervals.

Head: about as wide as or even wider than pronotum. Eyes very large though laterally but

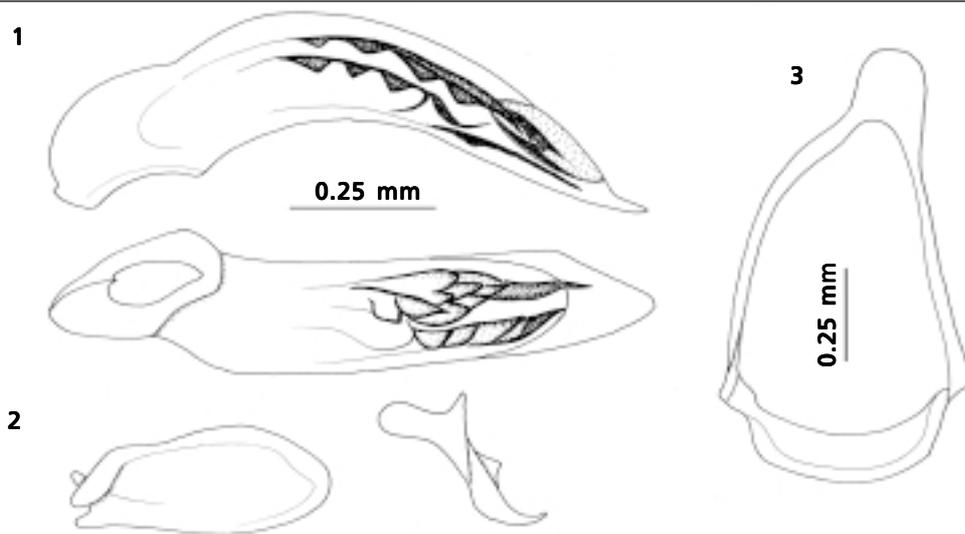


Fig. 1. Male genitalia of *Dolichoctis glabripennis* n. sp.: 1. Aedeagus; 2. Parameres; 3. Genital ring.

*Fig. 1. Genitalia masculina de Dolichoctis glabripennis sp. n.: 1. Edeago; 2. Parámetros; 3. Anillo genital.*

moderately protruding. Labrum elongate, apically transverse and slightly excised, 6-setose, latero-apically with a fringe of hairs. Mandibles moderately elongate. Palpi, labium and mentum as in *D. microdera*. Antennae of moderate size, surpassing base of pronotum by about 2 antennomeres. Median antennomeres c 2.5x as long as wide. Surface with distinct though slightly superficial, isodiametric microreticulation, fairly glossy.

Pronotum: rather similar to that of *D. microdera*. Narrow, somewhat cordiform, fairly depressed, apex as wide as base, widest diameter slightly in front of middle. Lateral margin regularly convex, near base shortly excised. Apex fairly deeply excised, apical angles projecting, obtuse at tip. Base straight, laterally obliquely rounded, basal angles wide, >100°, rather obtuse. Apex indistinctly margined, base margined only laterally. Median line distinct, almost complete, slightly deepened towards base, complete. Anterior transverse impression absent, basal impression moderately impressed. Lateral channel narrow throughout, but slightly widened immediately in front of base. Basal grooves rather deep, more or less linear, slightly oblique, anteriorly and posteriorly merging into transverse basal sulcus and into lateral channel. Anterior lateral seta absent, posterior lateral seta situated at basal angle. Surface with fine transverse wrinkles and with highly superficial, isodiametric to slightly transverse microreticulation, almost impunctate, rather glossy.

Elytra: rather wide and short, somewhat quadrate, dorsal surface highly convex. Humeri widely rounded, lateral margin gently convex, apical



Fig. 2. Habitus of *Dolichoctis glabripennis* n. sp., length 4.8 mm.

*Fig. 2. Habitus de Dolichoctis glabripennis sp. n., longitud 4,8 mm.*

margin oblique, straight or even very gently concave. Apical angle rounded. Marginal channel narrow, slightly widened at anterior third. Striae barely indicated or almost lacking, usually only inner striae basally perceptible as fine lines or rows of extremely faint punctures. Intervals absolutely depressed, impunctate. Two extremely fine discal punctures present in middle of third interval slightly behind middle and in apical fourth of elytra, bearing almost invisible, extremely short setae. Marginal series consisting of eight punctures behind humerus, two punctures behind middle, four more widely spaced punctures in apical third, and a single puncture at end of 3rd stria. Humeral and apical punctures widely separated. Marginal setae remarkably elongate. Microreticulation absent, surface highly glossy. Inner wings fully developed.

Lower surface: metepisternum elongate, almost 2x as long as wide. Abdomen impunctate. Terminal sternite bisetose in male, quadrisetose in female.

Legs: elongate, tarsi very slender. Tarsal claws elongate, with 4 fairly large teeth.

Male genitalia (fig. 1): genital ring oval-shaped, rather asymmetric, with large apical plate. Aedeagus short and stout, depressed in apical half, lower surface gently bisinuate. Apex rather short and stout, wide, triangularly narrowed towards tip, though tip obtuse. Orificum short, slightly turned to the left side, internal sac at bottom with two large, polydentate sclerites which both end in an acute tooth that is directed towards apex. Parameres very dissimilar, right paramere small, fairly short, left paramere large, rather short, at apex evenly convex.

Variation: Slight variation noted only in distinctness of elytral striae, as these are almost lacking in all Irian Jaya specimens, though yet perceptible but highly superficial in the single Papua New Guinea specimen.

#### Distribution

So far known from western central Irian Jaya and northern central Papua New Guinea.

#### Collecting circumstances

Largely unknown. Irian Jaya specimens probably sieved from litter on or under logs in rain forest, the Papua New Guinea specimen collected at light in lowland rain forest. Some specimens sampled at median altitude, at about 1,150 m.

#### Etymology

The name refers to the remarkably glabrous elytra.

#### Relationships

*D. glabripennis* is closely related to *D. microdera* Andrewes which is widely distributed through the Greater Sunda Islands from Sumatra to Sulawesi.

#### Recognition

For recognition of *D. glabripennis* the key in my

revision (BAEHR, 1999, p. 124) scarcely needs alteration. Under caption 2. just replace *microdera* Andrewes by *glabripennis* n. sp.

#### *Dolichoctis novaeirlandiae* n. sp. (figs. 3–6)

##### Types

Holotype: ♀, PNG, New Ireland prov. Schleinitz Range, 15 km S. E. Fissoa, 100m 03° 02' 58"S, 151° 34' 88"E, 7 III 2000 leg. A. Weigel (CBM–ZSM).

Paratype: ♀, same data (CBM).

##### Diagnosis

Easily distinguished from all other species of subgenus *Spinidolichoctis* Baehr except for *S. dentata* Darlington by the dentate rather than aculeate sutural apex of the elytra. Distinguished from *D. dentata* by the wide, not cordate pronotum and the oval-shaped rather than quadrate elytra.

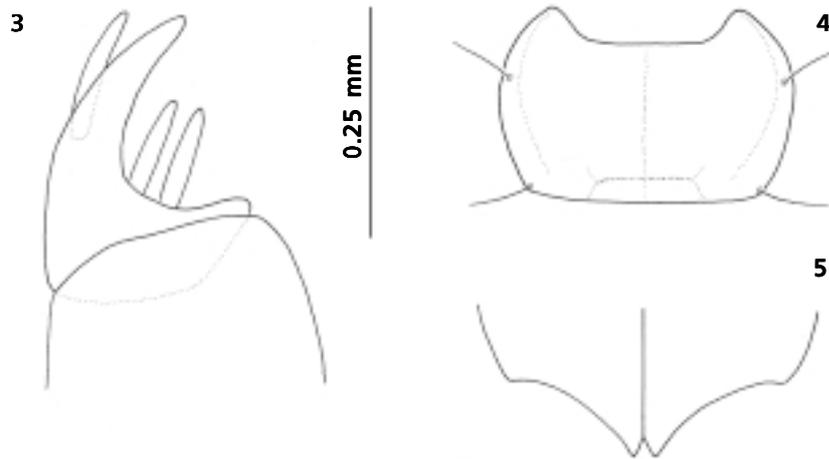
##### Description

Measurements: length 6.1 mm; width 2.70–2.75 mm. Ratios: width/length of prothorax 1.78–1.81; width base/apex of prothorax 1.30–1.33; width prothorax/head 1.44–1.51; length/width of elytra 1.42–1.47; length elytra/prothorax 3.83–3.85.

Colour: deep black, only borders of labrum, mandibles, palpi, antennae, tarsi and apex of tibiae reddish, lateral margin of pronotum very indistinctly translucent. Apical denticle of elytra black. Abdomen dark piceous to black.

Head: generally as in related species of subgenus *Spinidolichoctis*. Labrum elongate, anteriorly slightly convex. Frons in middle behind clypeal suture with an extremely shallow, about circular impression. Eyes of average size, almost semicircular, laterally markedly projecting, orbits short, rather oblique, neck rather narrow. Only the posterior supraorbital seta present, anterior seta absent, though the pore present. Antenna rather short, slightly surpassing base of pronotum, subapical antennomeres about 1.5x as long as wide. Surface with fairly distinct though somewhat superficial isodiametric microreticulation, with extremely fine and scattered puncturation, and on vertex with fine wrinkles, moderately glossy.

Pronotum (fig. 4): very wide, depressed, base considerably wider than apex. Lateral margin evenly convex, in apical half markedly incurved, towards base gently convex to almost straight. Apex rather deeply excised, excision almost transverse, apical angles produced but evenly rounded. Basal angles very obtuse, base straight, laterally obliquely convex. Apex margined throughout, though faintly in middle, base not margined. Median line fairly impressed, almost reaching apex and base, basal grooves fairly deep, about linear, obliquely oval-shaped. Lateral explanation wide throughout, even widened towards



Figs. 3–5. *Dolichoctis novaeirlandiae* n. sp.: 3. Female stylomeres; 4. Pronotum; 5. Apex of elytra.

Figs. 3–5. *Dolichoctis novaeirlandiae* sp. n.: 3. Estilómero femenino; 4. Pronoto; 5. Ápice del élitro.

base, lateral margins not perceptibly upturned though widely explanate. Anterior lateral seta absent, posterior seta situated at basal angle. Surface with some fine, irregular wrinkles and fine, scattered punctures, with fine and very superficial microreticulation that is composed of transverse lines and meshes, rather glossy.

Elytra (figs. 5, 6): comparatively elongate, rather depressed, gently oval, widest in middle, lateral margins almost evenly convex. Lateral apical angles obtusely angulate, sutural angles slightly dehiscent, triangularly dentate. Striation complete, striae rather lightly impressed, impunctate, intervals very gently convex, impunctate. Two very fine discal punctures situated considerably behind middle and at apical fifth. The anterior puncture in middle of 3rd interval, the posterior one near 2nd stria. Surface with very fine and superficial though remarkably regular microreticulation composed of transverse lines and meshes, rather glossy, even slightly iridescent. Inner wings fully developed.

Lower surface: metepisternum moderately elongate, c 1.8x as long as wide. Abdomen impunctate. Terminal abdominal sternum in female bisetose.

Legs: elongate, slender. Tarsal claws elongate, with 3–4 rather delicate teeth.

Male genitalia: unknown.

Female genitalia (fig. 3): apex of stylomere 1 asetose. Stylomere 2 elongate, curved, with 2 elongate latero-ventral ensiform seta and one elongate medio-dorsal ensiform seta. Apparently without any nematiform seta.

Variation: faint variation noted in relative shape of pronotum and elytra.



Fig. 6. Habitus de *Dolichoctis novaeirlandiae* n. sp., length 6.1 mm.

Fig. 6. Habitus de *Dolichoctis novaeirlandiae* sp. n., longitud 6,1 mm.

Partial identification key of *Dolichoctis novaeirlandiae* n. sp. (see BAEHR, 1999). For recognition of both new species the key in my revision (BAEHR, 1999, p. 124) is changed up to caption 10 from there (the key has not been altered and will not be repeated here).

*Clave parcial para la identificación de Dolichoctis novaeirlandiae* sp. n. (ver BAEHR, 1999). Para reconocer las dos nuevas especies, la clave de mi revisión (BAEHR, 1999, p. 124) se ha cambiado hasta el punto 10 (el resto de la clave no se ha cambiado y no se incluye).

1	Apex of elytra rounded, not dentate or aculeate at sutural angle	<i>Dolichoctis</i> s. str.	2
	Apex of elytra dentate or aculeate at sutural angle	4	
2	Prothorax wide, marginal channel wide (BAEHR, 1999, fig. 29)	3	
	Prothorax narrow, marginal channel narrow (fig. 2)	<i>glabripennis</i> n. sp.	
3	Elytra wide, ovate; marginal channel wide, explanate	<i>striata</i> Schmidt-Göbel	
	Elytra narrow, lateral margin parallel; marginal channel narrow, not explanate	<i>elongata</i> Baehr	
4	Head and pronotum with microreticulation; colour either unicolourous, blackish or dark piceous, or elytra blackish with reddish sutural stripe, or bimaculate in posterior half with maculae situated near suture	<i>Spinidolichoctis</i> n. subgen.	25
	Head and pronotum without microreticulation; colour either distinctly bicolourous with head and prothorax reddish and elytra darker, or light brownish throughout	<i>Papuadolichoctis</i> n. subgen.	27
5	Eyes small but abruptly prominent, frons swollen on either side; prothorax semicircular, >2x as wide as long	<i>distorta</i> Darlington	
	Eyes normal, not abruptly prominent, frons normal; prothorax not semicircular, <2 x as wide as long	6	
6	Elytra either with reddish sutural stripe or bimaculate in posterior half	7	
	Elytra unicolorous	9	
7	Elytra with reddish sutural stripe	<i>suturalis</i> Darlington	
	Elytra bimaculate in posterior half	8	
8	Pronotum narrower, cordiform, without distinct reddish margins, basal angles rectangular (BAEHR, 1999, fig. 49); elytral spots broadly joined at suture, forming a common elliptical transverse spot (BAEHR, 1999, fig. 102)	<i>angustemaculata</i> Baehr	
	Pronotum wider, laterally evenly convex, with distinct reddish margins, basal angles obtuse (BAEHR, 1999, fig. 50); elytral spots separated at suture, somewhat irregularly shaped (BAEHR, 1999, fig. 103)	<i>riedeli</i> Baehr	
9	Both supraorbital setae present; in the case of broken anterior seta, lateral margins of pronotum wide and distinctly reddish translucent, elytra with very weak and superficial microreticulation and with distinct iridescent lustre; aedeagus (BAEHR, 1999, fig. 5)	<i>bisetosa</i> Baehr	
	Anterior supraorbital seta absent, though pore present; lateral margins of pronotum more or less wide but usually not distinctly reddish translucent, elytra usually with more distinct microreticulation and without or with less distinct iridescent lustre	10	
10	Sutural apex of elytra only dentate (fig. 5; BAEHR, 1999, fig. 62)	10a	
	Sutural apex of elytra aculeate (BAEHR, 1999, figs 59, 60, 63–77)	11	
10a	Elytra rather quadrate; pronotum not much wider than head, rather cordiform (BAEHR, 1999, fig. 32). New Guinea	<i>dentata</i> Darlington	
	Elytra oval-shaped (fig. 6); pronotum much wider than head, not cordiform (fig. 4). New Ireland	<i>novaeirlandiae</i> n. sp.	

**Distribution**

Central New Ireland. Known only from type locality.

**Collecting circumstances**

Largely unknown. Probably collected under bark of logs in rain forest at low altitude.

**Etymology**

The name refers to the range of this species, the island of New Ireland.

**Relationships**

Although *D. novaeirlandiae* has in common the short, dentate apex of the elytra with *D. dentata* Darlington from New Guinea, most probably it is not closely related to the latter species, because the mentioned similarity presumably is a plesiomorphic character state still present in both species.

**Recognition**

For recognition of *D. novaeirlandiae* the key in my revision (BAEHR, 1999, p. 124) can be followed to caption 10 which subsequently must be altered as the adjoined partial identification key.

**Remarks**

The new species communicated herein in some ways alter distribution and species inventory of the genus *Dolichoctis* in the Papuan Subregion. The new species *D. novaeirlandiae* extends the range of the genus *Dolichoctis* to New Ireland. The new species *Dolichoctis glabripennis* underlines the status of New Guinea as a stronghold of endemism for the genus *Dolichoctis*, because the number of species common to New Guinea and Southeast Asia again is reduced and apparently now only includes the widespread *D. striata* Schmidt-Göbel of the nominate subgenus, and *D. aculeata* Chaudoir of the predominantly Papuan subgenus *Spinidolichoctis*. The latter species occurs in New Guinea, New Britain, and northern Australia, but also on Sulawesi and Buru Islands.

However, even the common "species" *Dolichoctis striata* remains doubtful in some ways, because specimens at my disposal from the Philippine Islands, the Moluccas, various parts of New Guinea, and Australia differ rather in certain aspects of their external shape and structure from those of the Sunda Islands and continental South Asia, and thus, it is quite uncertain whether this

complex can be maintained as a single "species" in future. Presumably, it would be better—or even should be—dismembered into subspecies or even separate species. This survey, however, is not yet finished and to date, no clear picture has been gathered.

Nevertheless, the thoughts about colonization of New Guinea by species-groups and species of the genus *Dolichoctis* expressed in BAEHR (1999) do not need much alteration, because the evolution of *D. glabripennis* and/or the immigration of its ancestor must indeed have been a rather recent event, with respect to the still close relationship between this New Guinean species and the Oriental *D. microdera*.

In view of its only dentate instead of aculeate elytral apex, *Dolichoctis novaeirlandiae* seems to be rather remotely related to any New Guinean species of the subgenus *Spinidolichoctis*. Such structure of the elytral apex only occurs in *D. dentata* Darlington from New Guinea which, however, does not seem to be closely related to *D. novaeirlandiae*. The question how *D. novaeirlandiae* evolved and/or from where it or its ancestor arrived on New Ireland, still remains open. However it must be closely related to the original stock of the present subgenus *Spinidolichoctis* that is restricted to the Moluccas, the New Guinean region, and northern Australia.

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