

## A new genus of the family Nitidulidae (Coleoptera: Polyphaga) from Australia

### Новый род семейства Nitidulidae (Coleoptera: Polyphaga) из Австралии

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*Brittonema* **gen. nov.** of the subfamily Cillaeinae is described. This genus includes two new species from Australia (Queensland), *B. mandibulare* **sp. nov.** and *B. pygidiatum* **sp. nov.** The new genus has a unique combination of characters, and also peculiar shape of pronotum and structure of genitalia making possible its recognition among other genera of the subfamily.

В статье описан *Brittonema* **gen. nov.** из подсемейства Cillaeinae, включающий два новых вида из Австралии (Квинсленд): *B. mandibulare* **gen. et sp. nov.** и *B. pygidiatum* **gen. et sp. nov.** Новый род характеризуется уникальной комбинацией признаков, а также своеобразными формой переднегруди и строением гениталий, которые позволяют легко диагностировать его среди остальных родов подсемейства.

**Key words:** Australia, Coleoptera, Nitidulidae, Cillaeinae, new genus, new species

**Ключевые слова:** Австралия, Coleoptera, Nitidulidae, Cillaeinae, жесткокрылые, блестянки, новый род, новые виды

## INTRODUCTION

The recently elaborated generic system of the family Nitidulidae (Kirejtshuk, 2008) last two years was added by some contributions. There have been published descriptions of two genera in the tribe Nitidulini: *Neohebascus* Cline, 2009 and *Bolivitoxus* Kirejtshuk, 2009, and also one genus from Meligethinae: *Sebastiangethes* Audisio, Kirk-Spriggs and Cline, 2008. Besides, Audisio et al. (2009) revised the classification of the subfamily Meligethinae and proposed 22 new genera. In the latter version of the subfamily classification all taxa treated before as subgenera were elevated to the generic level and some synonyms were re-established as valid genera. The new genus described herein was studied by the author many years ago. Last year the picture of one species of it was published in Jelinek et al.

(2010) with the name 'Cillaeinae gen. sp.'. Unfortunately the subfamily Cillaeinae in general still remains poorly known in comparison with other groups of Nitidulidae. The most comprehensive review of the genera of this subfamily was published only for the Hawaiian fauna (Ewing, 2007), however the rest recent faunas of Cillaeinae (especially in the areas with tropical climate) need to be studied.

The following acronyms are used for collections: ANIC, Australian National Insect Collection, Department of Entomology, Commonwealth Scientific and Industrial Research Organisation, Canberra; BMNH, Natural History Museum (formerly British Museum of Natural History), London; QM, Queensland Museum, Brisbane; ZIN, Zoological Institute of the Russian Academy of Sciences, St. Petersburg.

## RESULTS

Order **COLEOPTERA**

Suborder POLYPHAGA

Superfamily CUCUJOIDEA

Family **NITIDULIDAE** Latreille, 1802

Subfamily CILLAEINAE Kirejtshuk & Audisio in Kirejtshuk, 1986

**Brittonema** gen. nov.

Type species: *Brittonema mandibulare* gen. et sp. nov.

**Diagnosis.** Body comparatively medium-sized (6.0–15.5 mm), narrow and elongate, subflattened dorsally and ventrally. Dorsum rather coarsely punctured, smooth to finely microreticulate; elytral puncturation more or less clearly arranged in longitudinal rows; underside finely and densely punctured or with strongly reduced puncturation; body with very short pubescence. Head subflattened (either somewhat inclined anteriorly or convex medially) and rather strongly narrowed at base, moderately projecting anteriorly, clearly depressed between antennal insertions and with anterior edge of frons truncate; antennal grooves strongly convergent posteriorly and with distinct inner edge; mentum very wide and subquadrangular; pregenal process at hypostomal sinus comparatively wide. Ultimate labial palpomere short and transverse; ultimate maxillary palpomere long and subcylindrical. Antennae 11-segmented bearing 3-segmented club without any evident trace of sexual dimorphism. Pronotum somewhat widened anteriorly, subflattened at disk and slightly sloping at narrowly bordered sides, its anterior and posterior angles with somewhat rounded vertex; its anterior edge shallowly emarginate or nearly straight and posterior one nearly straight. Elytra with truncate apices remaining at least last three abdominal segments uncovered, with narrowly explanate and bordered sides. Laterosternites of two last abdominal segments moderately wide and widened posteriorly. Pygidium slightly

convex and widely rounded to subtruncate at apex in both sexes. Prosternal process flattened, not curved along procoxae and strongly widened at rounded apex. All pairs of coxae narrowly separated. Mesoventrite medially flattened and almost not excavate, but at sides with distinct depressions for mesofemora. Metaventrite with a distinct median suture (discrimen) along the whole length but without submesocoxal lines. Hypopygidium very widely rounded to subtruncate at apex in both sexes. Legs rather narrow and of usual shape. Pro-tibiae very narrow and with rather short spurs. Tarsi with rather widely lobed tarsomeres 1–3. Male anal sclerite rather long and with subacute apex. Aedeagus heavily sclerotised, moderately long, with a small median excision at acute apex of penis trunk and with sharply acute apex of tegmen. Ovipositor heavily sclerotised, inner and outer lobes of gonocoxites well isolated, short styli located far from acuminate apex of ovipositor.

**Composition.** The new genus includes the type species and *B. pygidiatum* gen. et sp. nov.

**Comparison.** This new genus can be compared with the genera characterised by the dorsally flattened body with pronotum subquadrate or widened anteriorly (*Cillaeopeplus* Sharp, 1908; *Cillaeus* Laporte, 1835; *Ithyphenes* Murray, 1864; *Platynema* Ritsema, 1885 and *Tokocillaeus* Kirejtshuk, 2001). Indeed the pronotum clearly widened anteriorly is known only in *Brittonema* gen. nov., however it can be supposed that other species of this new genus still remaining undescribed could have a subquadrate pronotum or undescribed species of other mentioned genera could be with somewhat transformed pronotum. This new genus differs from *Cillaeopeplus* also in the shorter head, shorter elytra (less than twice as long as wide), widely dilated tarsomeres 1–3 and more or less smoothed integument of dorsum (at least head and pronotum), and in the elytra with longitudinal rows of punctures but without distinct striae.

Besides, *Brittonema* **gen. nov.** differs also from *Cillaeus* and *Tokocillaeus* in the much narrower base of head, median excision of labrum, markedly shorter elytra with seriate puncturation, pubescent dorsum; and also from *Ithyphenes* and *Platynema* in the head narrowed at base, shorter elytra, convex or subflattened (not depressed) pygidium, antennal grooves distinctly convergent posteriorly, narrowly separated coxae in all pairs, moderately lobed tarsomeres 1–3, pubescent dorsum (antennal grooves of *Ithyphenes* and *Platynema* are rather reduced and (sub) divergent and following closely the inner edge of eyes). Among the mentioned genera, the genus *Cillaeus* looks like more archaic and maintaining the most number of plesiomorphic characters. The latter genus could be in any sense an initial one to other mentioned groups with the more restricted distribution and demonstrating a greater or lesser specialization in apomorphic characters. The genera *Cillaeus* and *Brittonema* **gen. nov.** are characterised by the mesoventrite with the quite distinct lateral depressions for reception of mesofemora, while these depressions are weakened in *Ithyphenes* and *Platynema*.

*Etymology.* The name of this genus is formed from the name of outstanding Australian coleopterist E.B. Britton and Greek 'nema' (thread), referring to the long and flexible body. Gender neuter.

*Note.* Bionomy of the species of this new genus remains unknown, however, their associations with interstices on palm trunks and at base of leaves can be supposed.

***Brittonema mandibulare* gen. et sp. nov.**  
(Figs 1–4, 8–11)

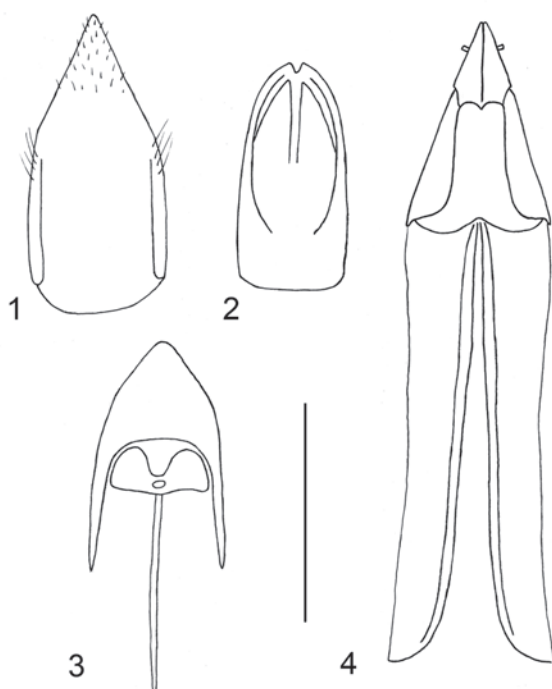
*Holotype.* Male; **Australia, Queensland**, '6 m. up Mt. Lewis Rd., N Q, 27.12.72, A. Walford-Huggins', 'from palm', '*Brachypeplus* sp. not in B.M., E.B. Britton det. 74'; ANIC.

*Paratypes.* Ten males and females; same data as for holotype; BMNH, ANIC, ZIN. Males and females; **Australia, Queensland**, 'Mt. Lewis, N Qld, 8 Dec. 1974, A. Walford-Huggins', 'E. Gowing-Scopes coll.'; BMNH, ZIN.

*Diagnosis.* This new species differs from its another congener in the larger and much wider body, transverse head with truncate (not emarginate) anterior edge, gentle outline of temples behind eyes, transverse (not V-shaped) depression between antennal insertions, more projecting and not subquadangular male labrum, strong sexual dimorphism in structure of mandibles, much shorter tergites of abdomen uncovered by elytra, tergites uncovered by elytra with paramedian depressions, truncate apex of pygidium in both sexes, subacute apex of anal sclerite far projecting behind pygidial apex, wider mentum, longer ultimate labial palpomeres, subparallel tibiae, wider tarsi, strongly dentate tarsal claws, finer puncturation on dorsum (except elytra) and double rows of punctures between longitudinal elevated lines on elytra, and also in the structure of male genitalia.

*Description of holotype (male).* Length with mandibles 15.3, width 4.0, height 1.3 mm. Elongate, subflattened dorsally and slightly convex ventrally; yellowish reddish, but base of head, apices of mandibles, scutellum, lateral and apical parts of elytra, unclear paramedian spots on tergites uncovered by elytra and femoro-tibial articulations more or less infuscate to dark brown; body with a faint shine; covered with short and subrecumbent brown greyish or yellowish hairs, which are about as long as distance between insertions; on elytra these hairs intermixed with longitudinal rows of somewhat longer hairs disposed between double rows of punctures.

Dorsum, except elytra, and abdominal ventrites with very small punctures (subequal or slightly larger than eye facets), interspaces between them on head about a puncture diameter and on rest sclerites markedly greater, with extremely fine and dense alutination. Elytra with double regular longitudinal rows of large punctures (about three times as great as those on other dorsal sclerites), interspaces between punctures less than half of puncture diameter and smoothed; between double rows of



**Figs 1–4.** *Brittonema mandibulare* gen. et sp. nov. Tegmen, ventral view (1); penis trunk, dorsal view (2); anal sclerite and *spiculum gastrale*, ventral view (3); ovipositor, ventral view (4). Scale bar: 1.0 mm.

punctures a narrow elevated line disposed. Thoracic sterna with more or less obsolete puncturation and mostly finely alutaceous to smoothed.

Head (Fig. 10) transverse (markedly shorter than distance between eyes) and strongly narrowing behind extremely finely faceted eyes, convex at base and sloping anteriorly, with a transverse depression between rather elevated antennal insertions, its anterior edge truncate, unbordered and with rounded lateral angles, base without laterally projecting temples behind eyes. Labrum entire (not divided into lobes, but with a short blackish line), medially somewhat projecting to truncate apex and arcuately widening to anterior edge of frons. Mandibles with tridentate apices and with bidentate laterodorsal processes. Antennae about 1.5 times as long as head width, antennomere 3 and antennomere 5 compa-

rable in length and each about four fifth as long as scape, their elongate oval club about two ninth of total antennal length, almost twice as long as wide, antennomere 9 about as long as antennomeres 10 and 11 combined, antennomere 11 subacute at apex. Pronotum subquadrangular and rather widened anteriorly, subflattened at disk and gently sloping at extremely narrowly bordered sides, all corners rounded, sides and base finely bordered, anterior edge emarginate, sides and posterior edge more or less straight, lateral edge with nearly regular and very distinct but small notches. Scutellum subpentagonal to subhemicircular, about one and one third as wide as long. Elytra flattened at disk and steeply sloped at extremely narrowly explanate sides, apical outer angle widely rounded, posterior edge obliquely truncate and forming a very stump sutural angle, leaving three last abdominal segments and half of previous one uncovered.

Three last tergites slightly convex in the middle and slightly depressed at sides; pygidium (ultimate tergite) subtriangular, about as long as wide and rounded to subtruncate at apex. Narrowly rounded apex of anal sclerite well exposed dorsally and far projecting posteriorly.

Mentum (Fig. 9) rather large and transverse, about 2.5 times as wide as long, subquadrangular, widened anteriorly and with widely rounded anterior and posterior angles; plane of mentum with two paramedian oval depressions. Lateral parts (lobes) of mentum widely cover comparatively wide hypostomal sinuses. Ligula with very wide lobes. Ultimate labial palpomere transverse, slightly wider than long and truncate at apex. Ultimate maxillary palpomere subcylindrical and about four times as long as thick. Antennal grooves S-shaped, strongly convergent posteriorly and turned externally behind eyes. Prosternum slightly con-

vex and with somewhat smoothly roof-like process, not curved along coxae, strongly widened before widely rounded apex (which is about 1.5 times as wide as antennal club). The distance between mesocoxae 1.5 times and that between metacoxae nearly as great as that between procoxae. Mesoventrite slightly medially depressed in distal half and with lateral distinct depressions for receipt of mesofemora. Metaventrite flattened, slightly longer than prosternum with process, its anterior edge almost straight and posterior edge between coxae angularly excised. Submesocoxal and submetacoxal lines unexpressed. Abdominal ventrite 1 about 1.5 times as long as ventrite 2, but somewhat shorter than ventrite 3; ventrites 4 and 5 longest and comparable in length; hypopygidium truncate at apex. Epipleura gradually narrowed distally, strongly elevated laterally and somewhat narrower than antennal club.

Legs moderately long and narrow, of usual structure. Tibiae about as long as antennal flagella and somewhat narrower than antennal club, slightly curved; protibia rounded at its apical outer angle; meso- and metatibiae slightly narrowing to rounded apex; spurs very small. Femora with more or less usual outline and about twice as wide as tibiae. Tarsi about half as long as tibiae, tarsomere 5 about as long as tarsomeres 1–3 combined, protarsi very widely lobed and about 1.5 times as wide as protibiae, meso- and metatarsi somewhat narrower, claws strongly toothed at base.

Aedeagus (Figs 1–2) well sclerotised. Apex of tegmen moderately projecting and angularly acute.

*Female.* Differs from the male in the subflattened head but with a distinct shallow depression between antennal insertions, and also with simple and transversely truncate labrum, simple mandibles with bidentate apices, lack of exposed anal sclerite. The apices of the female pygidium and hypopygidium, and antennae and tarsi are as subtruncate as the male ones. Ovipositor (Fig. 4) is rather long and heavily sclero-

tised, with the distal parts of inner lobes of gonocoxites clearly isolated from the proximal ones and very short styli located close the middle of sides of these inner parts.

*Variations.* Length with mandibles 11.5–15.5 mm. The colouration of paratypes varies from nearly unicolorous yellowish body with only head base somewhat darker, scutellum and elytral apices to nearly unicolorous brown body with lighter prescutellar parts of elytra and tarsi. Some variation is observed in puncturation and sculpture of the integument and most variation has the structure of male mandibles (particularly in the shape of apices and laterodorsal process of male mandibles).

*Etymology.* The new species is named for the large mandibles in males.

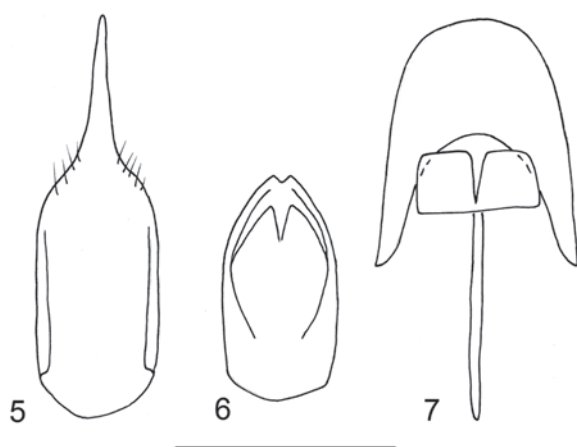
***Brittonema pygidiatum* gen. et sp. nov.**  
(Figs 5–7, 12–14)

*Holotype.* Male; **Australia, Queensland**, 'Mt. Lewis Rd., N. Q. 3000', 30 Oct. 1966, E. Britton; ANIC.

*Paratypes.* Male; same data as for holotype; ANIC. **Australia, Queensland**: male, 'Mt. Lewis, N. Q., 27.XII.1922, A. & M. Walford-Huggins, 7121' (ANIC); male, 'Russell R., at Bellenden, Ker Landing, N.Q., 5 m., 24 Oct. – 9 Nov.1981, EARTHWATCH/QLD. MUSEUM, Malaise trap, rainforest', 'on loan from Queensland Museum, Brisbane, 90.14' (QM); male, 'Laceys Creek, QLD, 10 km SE, El Arish, 40 m, 23 June – 5 Aug. 1982, S. & J. Peck, SBP47', 'flight intercept trap, rainforest' (ZIN).

*Diagnosis.* See the diagnosis of the previous species.

*Description of holotype (male).* Length 6.7, width 1.6, height 0.7 mm. Elongate, subflattened dorsally and slightly convex ventrally; yellowish reddish, antennal flagella and particularly clubs, scutellum, distal third of elytra and median stripes on tergites uncovered by elytra more or less infuscate to dark brown; body shining; covered with short suberect brown greyish hairs, which are about as long as distance between insertions; on elytra these hairs intermixed with yellowish hairs and also with longitudinal rows of hairs disposed between simple rows of punctures.



**Figs 5–7.** *Brittonema pygidiatum* gen. et sp. nov. Tegmen, ventral view (5); penis trunk, dorsal view (6); anal sclerite and *spiculum gastrale*, ventral view (7). Scale bar: 1.0 mm.

Head, pronotum and scutellum with more or less distinct punctures about twice as large as eye facets in diameter, interspaces between them about a puncture diameter and smooth to somewhat alutaceous. Elytra with single regular longitudinal rows of large transverse punctures (with transverse diameter about twice as great as those on head and pronotum), interspaces between punctures less than half of puncture diameter and smoothed; between rows of punctures a narrow elevated line disposed. Dorsal and ventral abdominal sclerites with punctures, subequal or slightly smaller than those on head and pronotum and slightly shallower, interspaces between them somewhat greater, with extremely fine and dense alutation. Prosternum with shallow and indistinct punctures with interspaces greater than puncture diameter and smoothly alutaceous. Metaventrite with fine puncturation and mostly finely alutaceous.

Head (Fig. 13) somewhat longer than wide at eyes and strongly narrowing behind extremely finely faceted eyes, somewhat convex along the middle, with V-shaped depression between elevated antennal insertions, its anterior edge emarginate and with rounded lateral angles. Labrum entire (not divided into lobes, but with a

short blackish line), medially somewhat projecting to truncate apex and straight at sides, base with laterally projecting angular temples behind eyes. Mandibles with bidentate apices. Antennae about one and one third as long as head width, antennomere 3 markedly longer than antennomere 5 and almost as long as scape, their elongate oval club about two sevenths of total antennal length, somewhat more than twice as long as wide, with antennomeres 9–11 compared in length and antennomere 11 subacute at apex. Pronotum subquadrangular and rather widened anteriorly, subflattened at disk and gently sloping at extremely narrowly bordered sides, all corners rounded, sides and base finely bordered, anterior edge emarginate, sides and posterior edge more or less straight, lateral edges with very distinct but small notches. Elytra flattened at disk and not steeply sloped at moderately explanate sides, apical outer angle widely rounded, posterior edge obliquely truncate and forming a very stump sutural angle, leaving three last abdominal segments and fourth of previous one uncovered. Three last tergites slightly and gently convex; pygidium (ultimate tergite) subtriangular, about one and two thirds as long as wide and narrowly rounded to subacute at apex. Widely rounded apex of anal sclerite slightly to scarcely exposed dorsally.

Mentum (Fig. 14) rather large and transverse, about 2.5 times as wide as long, subquadrangular slightly widened anteriorly and with rounded anterior and distinct posterior angles; plane of mentum without two paramedical depressions. Lateral parts (lobes) of mentum narrowly cover comparatively wide hypostomal sinuses. Ligula with moderately narrow lobes. Ultimate labial palpomere more than twice wider than long and truncate at apex. Ultimate maxillary palpomere subcylindrical, about

four times as long as thick and narrowing apically. Antennal grooves S-shaped, strongly convergent posteriorly and turned externally behind eyes. Prosternum slightly convex and with somewhat smoothly roof-like process, somewhat curved along coxae, strongly widened before widely rounded to subtruncate apex (which is slightly wider than antennal club). The distance between mesocoxae and that between metacoxae nearly as great as that between procoxae. Mesoventrite slightly medially depressed in distal half and with lateral distinct depressions for receipt of mesofemora. Metaventrite flattened, slightly longer than prosternum with process, its anterior edge almost straight and posterior edge between coxae angularly excised. Submesocoxal and submetacoxal lines unexpressed. Abdominal ventrite 1 slightly longer than ventrite 2, but twice shorter than each of ventrites 3 and 4; hypopygidium (ventrite 5) truncate at apex. Epipleura gradually narrowed distally, strongly elevated laterally and somewhat narrower than antennal club.

Legs moderately long and narrow, of usual structure. Tibiae markedly shorter than antennal flagella and much narrower than antennal club (about two thirds as wide as antennal club), with almost straight inner edge; protibiae somewhat rounded at its apical outer angle; meso- and metatibiae slightly narrowing to rounded apex; spur very small. Femora with more or less usual outline and about twice as wide as tibiae. Tarsi about two thirds as long as tibiae, tarsomere 5 about as long as tarsomeres 1–3 combined, protarsi very widely lobed and about somewhat wider than protibiae, meso- and metatarsi somewhat narrower, claws simple.

Aedeagus (Fig. 14) well sclerotised. Apex of tegmen strongly projecting and very narrowly acute.

*Female.* Unknown.

*Etymology.* The epithet of this new species refers to the long male pygidium of this new species.

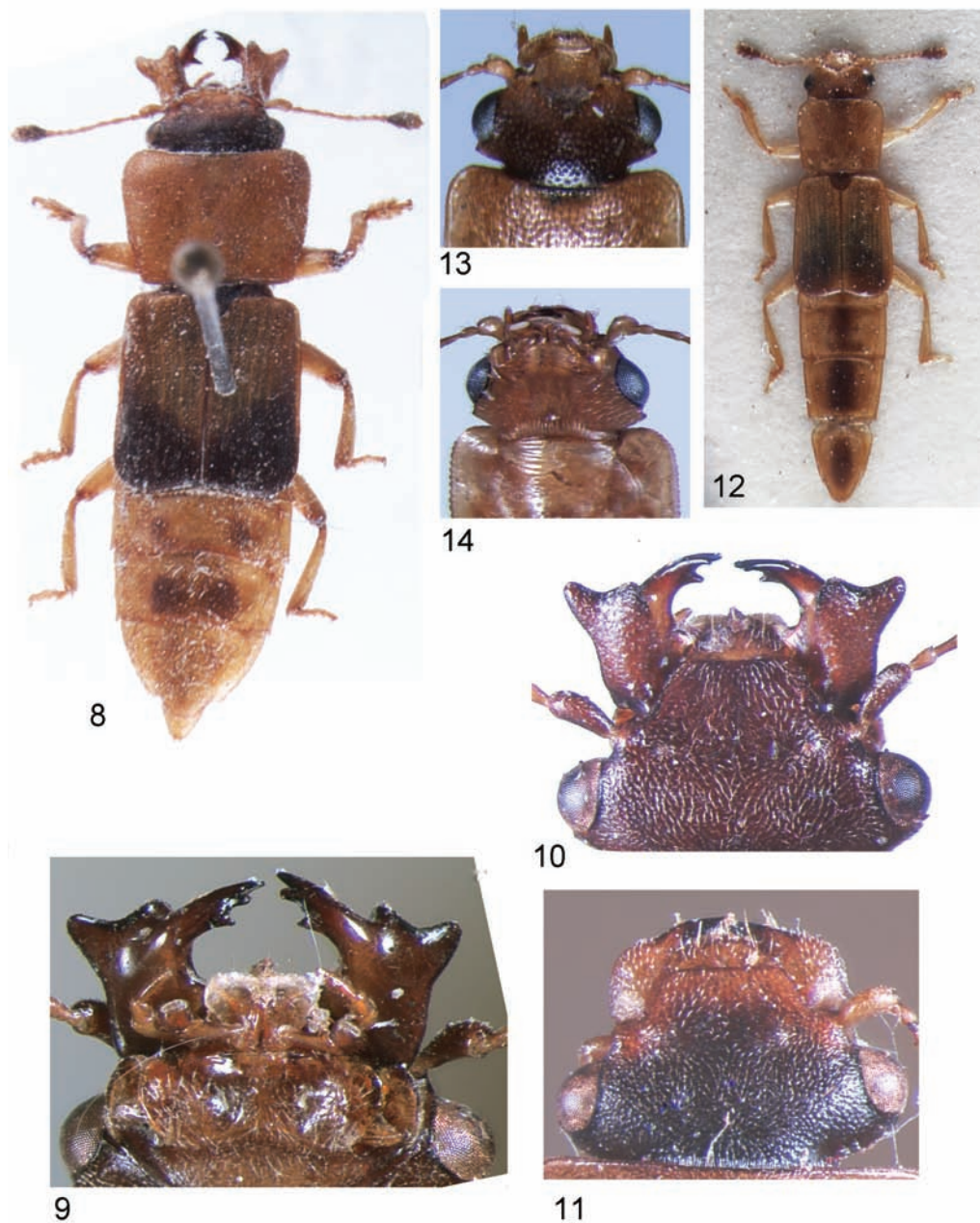
## ACKNOWLEDGEMENTS

The study of the author would be impossible without assistance of many colleagues and scientific organizations supported him. Particularly, the author greatly appreciates to M.V.L. Barclay and H. Mendel (BMNH), and also J.F. Lawrence (ANIC), A. Nel and T. Deuve (Muséum National d'Histoire Naturelle in Paris) for providing specimens and many other things for study. Besides, the study was supported by the program of the Presidium of the Russian Academy of Sciences 'Origin of the biosphere and evolution of geo-biological systems' and Russian Foundation of Basic Research (grant 09-04-00789-a). The author sincerely thanks the Muséum National d'Histoire Naturelle for providing him a possibility to work in this museum according to the programme of visiting professors. He is also very grateful to J. Jelinek (Národní Muzeum, Prague) and S. Hisamatsu (Ehime University, Matsuyama) for their valuable remarks on an earlier version of the manuscript.

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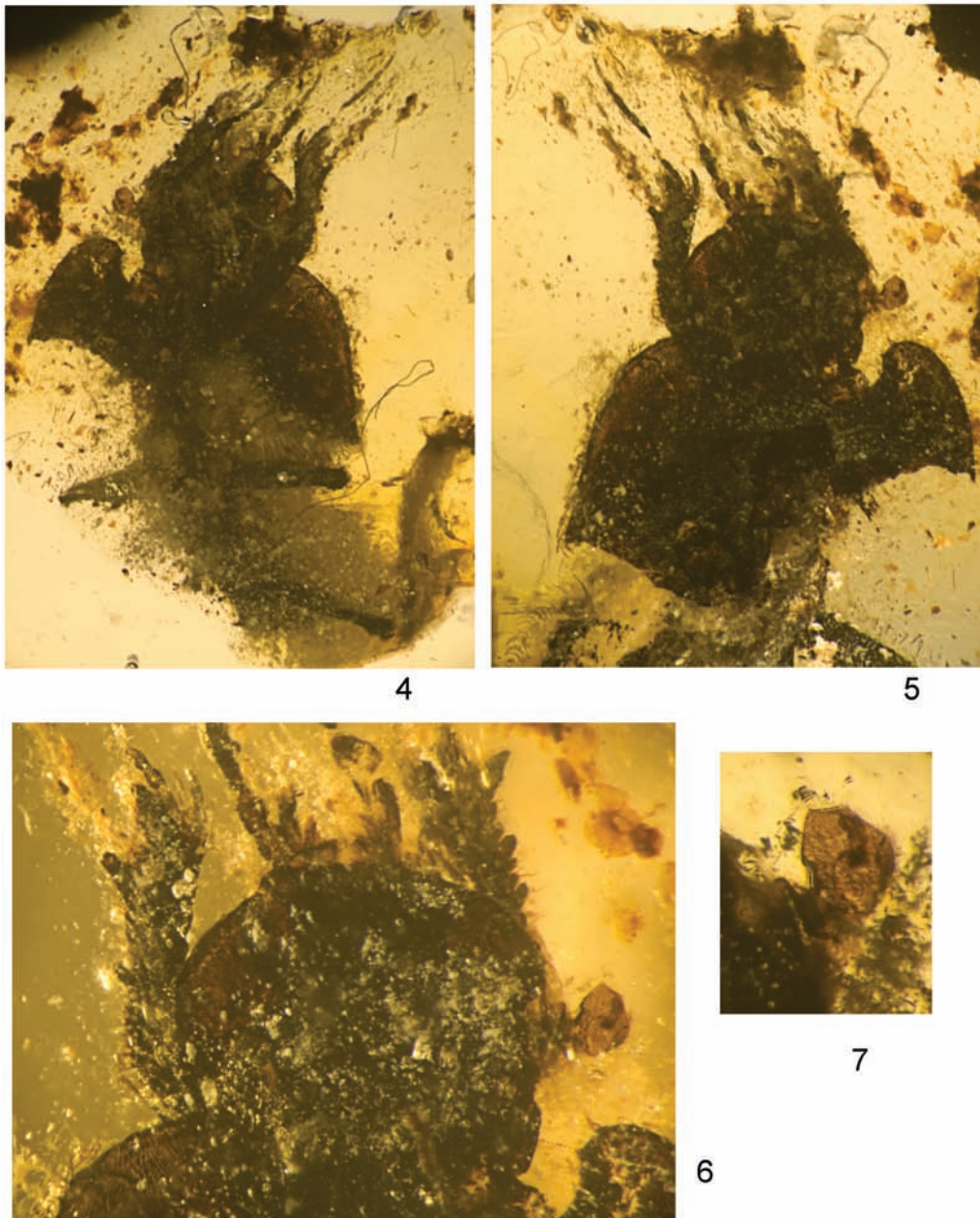
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Received April 4, 2011 / Accepted June 5, 2011



**Figs 8–14.** *Brittonema* gen. n. 8–11, *B. mandibulare* gen. et sp. nov.; paratype, male of '8 Dec. 1974' with length 15.3 mm (8, 9); paratype, male of '27.12.72' with length 12.3 mm (10); paratype, female of '8 Dec. 1974' with length 13.0 mm (11); 12–14, *B. pygidiatum* gen. et sp. nov.; paratype, male of '27.XII.1922' with length 8.3 m, (12); paratype, male of '23 June – 5 Aug. 1982' with length 7.6 mm (13, 14). Body, dorsal view (8, 12), mouthparts, ventral view (9), head, dorsal view (10, 13), head, ventral view (11, 14).





**Figs 4–7.** *Libanochrus calvus* gen. et sp. nov., holotype. Head and thorax, ventral view (4); head and pronotum, dorsal view (5); head, dorsal view (6); antennal club, dorsal view (7). Head width 2.6 mm.