

A New Genus and Species of the Tribe Molorchini (Coleoptera, Cerambycidae) from Central Thailand

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Abstract A new molorchine genus *Buddhapania* nov. is established based on *B. matsumotoi* sp. nov. from central Thailand. The new genus is in common with *Epania* PASCOE and *Glaphyra* NEWMAN or their related genera in the basic structure, but clearly distinguished from them by the median longitudinal ridge on the metanotum, which is located at the centre of the sutural concavities of both elytron. The affinity of *Buddhapania* nov. is discussed based on the detailed morphology.

Introduction

Ten of 22 genera of the tribe Molorchini are recorded from Oriental and Palearctic Regions (TAVAKILIAN & CHEVILLOTTE, 2015), of which eight genera such as *Molorchus* FABRICIUS and *Epania* PASCOE can be concluded as the genus group characterized by the fore coxal cavities opened behind and not closed by the pleural processes (NIISATO, 1986, 2007). I had an opportunity to examine a strange molorchine beetle in having widely dehiscent elytra due to the presence of a median longitudinal ridge on the metanotum from central Thailand. After a close examination, I concluded that it should be a new genus belonging to the same genus group mentioned above, and basically having a relationship with *Epania* PASCOE and *Glaphyra* NEWMAN. In the following paragraphs, I will describe it under the name of *Buddhapania matsumotoi* gen. et sp. nov., and discuss its systematic position based on the detailed morphology.

Materials and Methods

The materials examined were obtained during a collecting trip in central Thailand mainly by Tadayuki MATSUMOTO. The holotype and allotype designated herein will be preserved in the National Museum of Nature and Science, Tsukuba, Japan, and the paratypes are in the private collections of the author and the collectors.

The measurement of the type series was based on ten males and ten females chosen at random, though the largest and smallest specimens in both sexes were included as well. The abbreviations used for the ratio of the measurement in the description are as follows: HW — head width across eyes; FL — length of frons; FA — apical width of frons; FB — basal width of frons; PL — length of pronotum; PW — maximum width of pronotum; PA — apical width of pronotum; PB — basal width of pronotum; EL — length of elytra; EW — humeral width of elytra; M — arithmetic mean.

Taxonomy

Genus *Buddhapania* nov.

Type species: *Buddhapania matsumotoi* gen. et sp. nov.

Tribe Molorchini. Small molorchine of almost cylindrical body, densely haired throughout though without any maculation of pubescence. Similar in general appearance to *Epania* and *Glaphyra*, but readily distinguished from their relatives by the presence of the median longitudinal ridge on the metanotum.

Head very short, almost vertical in profile; frons quadrate, broadly concave along midline, without median groove; genae relatively shallow; mandibles short and thick, arcuate in apical part; palpi short in each segment, with terminal segment of labium elongate barrel-shape; eyes prominent, completely divided into upper and lower lobes. Antennae 11 segmented, without appendicle at terminal segment, matted by dense minute denticles on segments 4–11 in ♂ or 5–11 in ♀.

Pronotum large, with sides almost parallel in ♂ or gently arcuate in ♀, without lateral tubercles, provided with coarse reticulation on disc, except for smooth callosities. Mesonotum including scutellum entirely pubescent. Metanotum provided with a weak longitudinal ridge along midline, the ridge gradually raised apicad and largely exposing between sutural concavities of both elytron.

Elytra short, attaining apical margin of basal tergite, distinctly dehiscent from bases, with sutural margins markedly concave in sinuate line in apical 3/5. Hind wings emarginate near basal half of posterior margin, with simple vein $1A_3+2A$, and without vein $3A$.

Prosternum with fore coxal cavities weakly angulated externally, with furcasternum extended beyond the hind margin of coxae and well exposing in ventral view; inter-coxal process complete, not so narrow; pleural process barely reaching external third of coxal cavity. Mid coxal cavities widely opened to mesepimera.

Legs short; femora and tibiae compressed; tarsi thin, with long claw segments.

Genitalia in both sexes basically identical with the typical structure of *Epania* and *Glaphyra*.

Etymology. The new name *Buddhapania* is a combination of “Buddha” and “*Epania*”. “Buddha” is derived from the name of the founder of Buddhism, as well as the type locality of the type species, Phra Buddha (Phuttha) Chai, Saraburi Province of central Thailand. “*Epania*” is one of the largest genera of the Molorchini and the closest to the new genus.

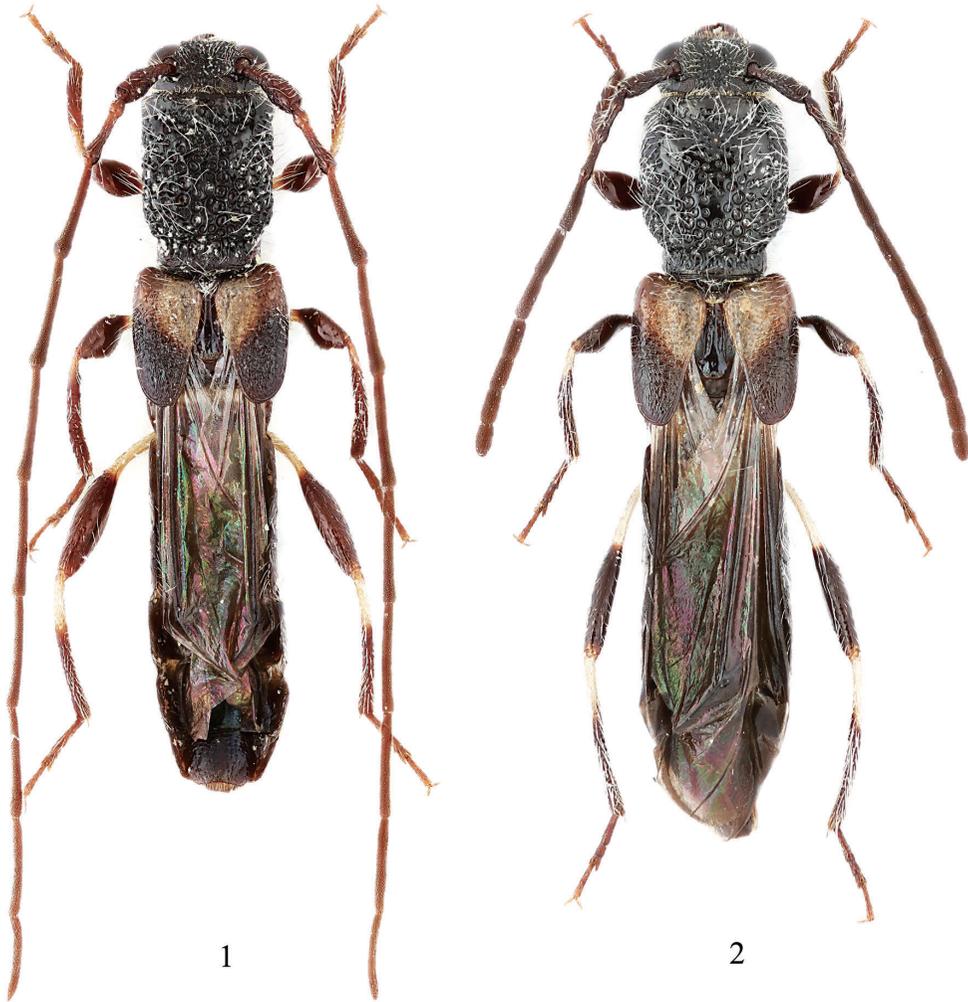
Range. Central Thailand.

Notes. As introduced in the description, *Buddhapania* nov. is easily separable from all the other genera of the Molorchini by the median longitudinal ridge on the metanotum which is largely exposing between both elytron. The systematic position of the new genus will be explained in detail in the Discussion section below.

Buddhapania matsumotoi sp. nov.

(Figs. 1–33)

Colour black to dark brown, brownish in antennae and legs, usually so along anterior and posterior margins of pronotum, shiny in general; mouthparts dark reddish brown, black in apices and inner margins of mandibles; elytra light yellowish brown, dark reddish brown in apical half or so, with the brown area strongly oblique in anterior margin and enlarged along external margin just before base; legs dark brown, pale yellow in peduncles of femora, basal parts of tibiae, though sometimes entirely

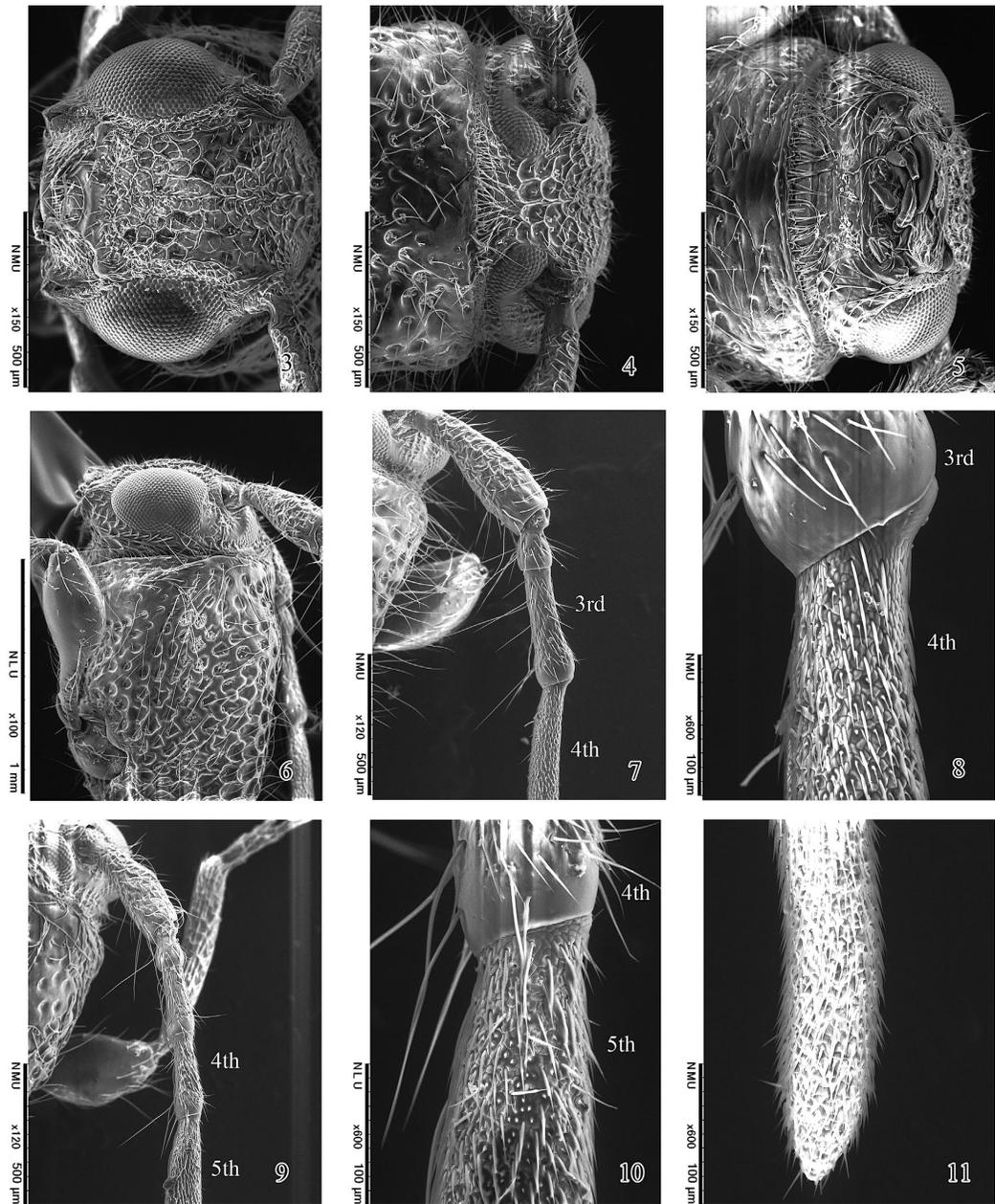


Figs. 1–2. *Buddhapania matsumotoi* gen. et sp. nov., holotype ♂ and paratype (allotype) ♀, from central Thailand.

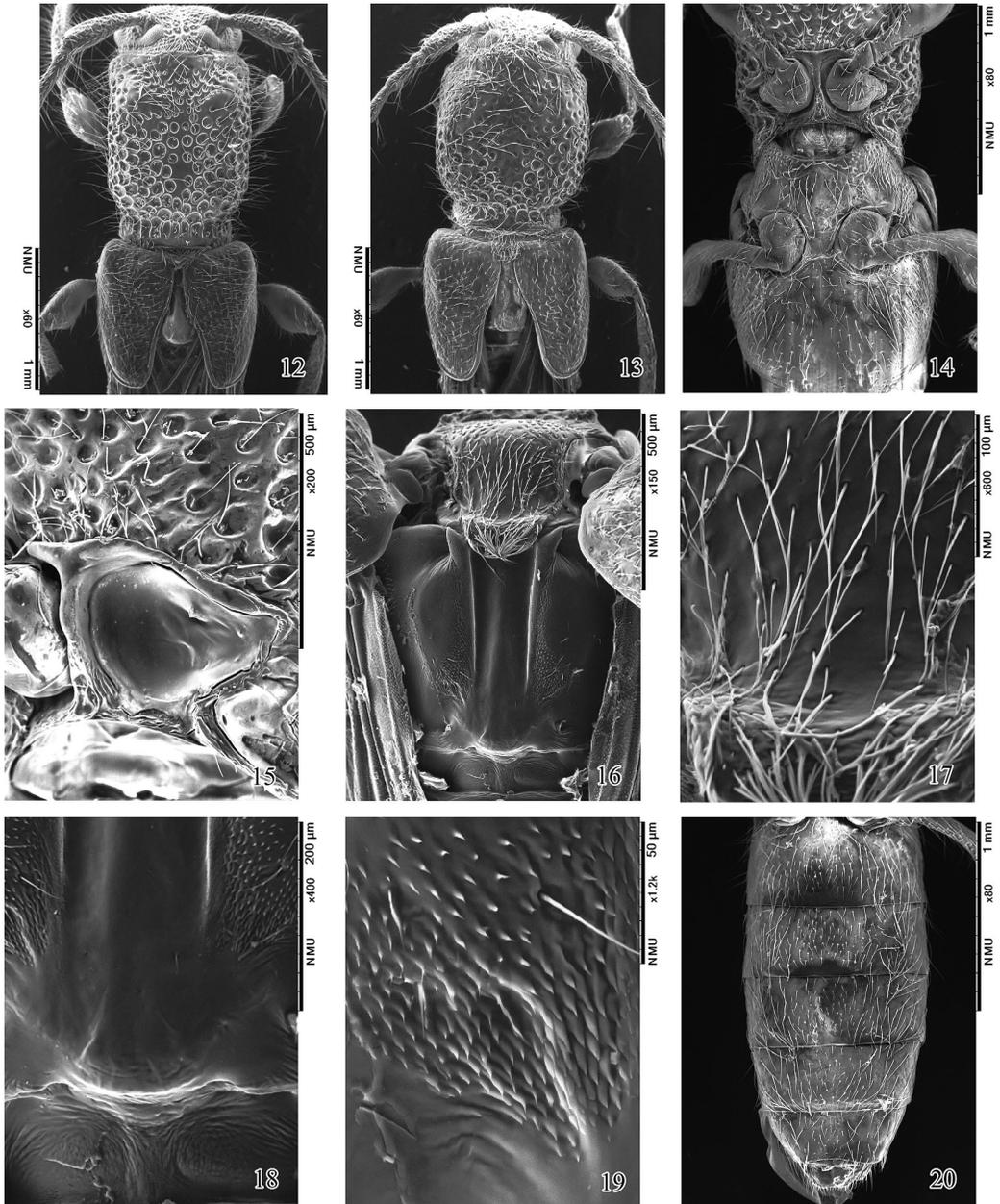
brownish in fore and mid tibiae; claws dull yellowish brown. Body densely clothed with long erect pale yellow hairs, especially long on thoraces, and dense and short on scutellum, without any pubescent maculation.

Male. Body length: 3.7–5.9 mm (from vertex to abdominal apex).

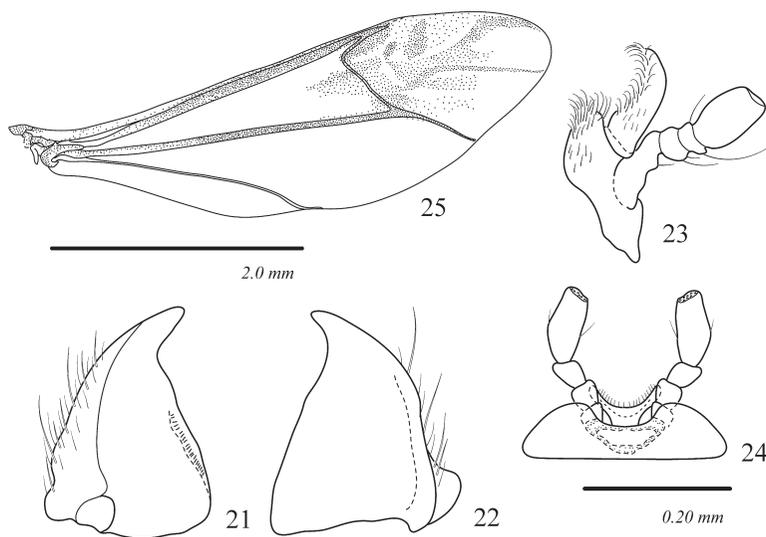
Head short, $\frac{2}{5}$ the length of pronotum, slightly wider than the apical width of pronotum, rather finely reticulate throughout; HW/PA 0.90–1.03 (M 0.99), HW/PW 0.93–1.00 (M 0.96); frons transversely quadrate, raised towards sides, strongly depressed near apex, FL/FB 0.92–1.00 (M 0.96), FA/FB 0.91–1.00 (M 0.95); clypeus strongly transverse, arcuately emarginate at apical margin, smooth, with punctured anterior margin; genae $\frac{1}{3}$ the depth of lower eye-lobes, obtusely dent ventrad in frontal view; vertex broadly shallowly concave; eyes small though well prominent, with each



Figs. 3–11. *Buddhapania matsumotoi* gen. et sp. nov., from central Thailand (SEM images). — 3, Head, frontal view; 4, ditto, dorsal view; 5, ditto, ventral view; 6, head and prothorax, lateral view; 7, right antenna; 8, ditto, enlarged 3rd and 4th segments; 9, right antenna; 10, ditto, enlarged 4th and 5th segments; 11, terminal segment. — 3–8, 11, ♂; 9, 10, ♀. — 12, Frontal view; 4, 7–11, dorsal view; 5, ventral view; 6, lateral view.



Figs. 12–20. *Buddhapania matsumotoi* gen. et sp. nov., from central Thailand (SEM images). — 12, 13, Head, pronotum and elytra; 14, pro-, meso- and metathoraces; 15, prosternum near basal half; 16, meso- and metanota; 17, mesonotum, enlarged; 18, apical part of median longitudinal ridge on metanotum; 19, dents on metanotum near median longitudinal ridge; 20, abdomen. — 12, 14–20, ♂; 13, ♀. — 12, 13, 16–19, Dorsal view; 15, dorso-lateral view; 14, 20, ventral view.



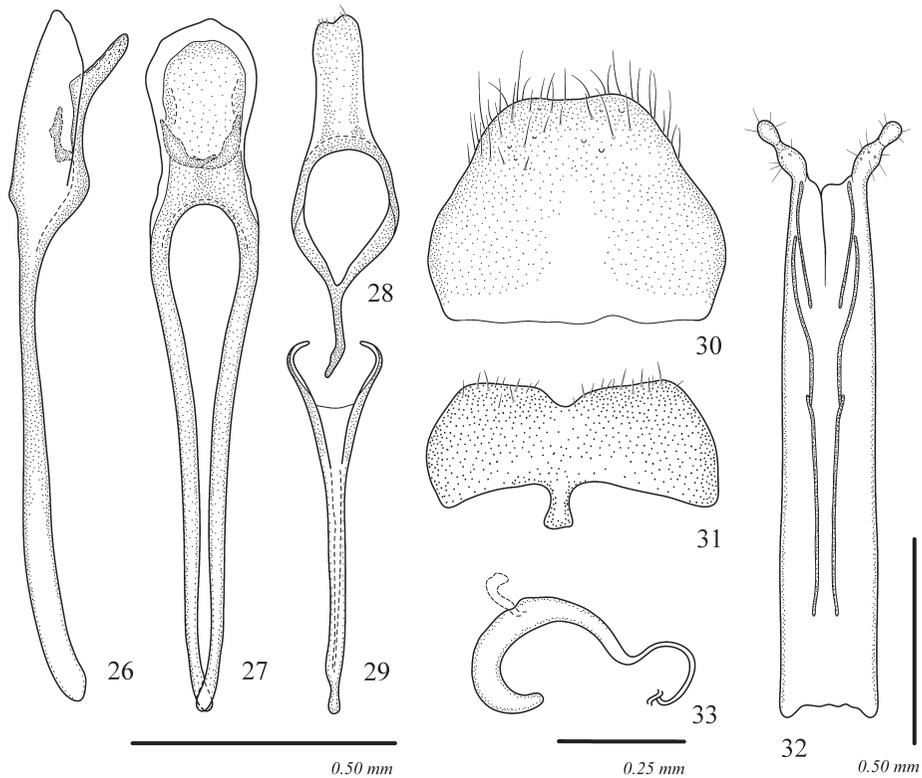
Figs. 21–25. Mouthparts and hind wing of *Buddhapania matsumotoi* gen. et sp. nov., ♂, from central Thailand. — 21, 22, Right mandible; 23, right maxilla; 24, labium; 25, right hind wing. — 21, 23, Dorsal view; 22, 24, ventral view.

eye-lobes 1/4 the width of head in frontal view. Antennae medium in length, extending elytral apices at about base of segment 8, sparsely clothed with pale hairs on basal four segments; scape rather weakly clavate, flattened in basal third, scattered with coarse punctures, segment 3 7/10 the length of scape and a little more than half the length of segment 4, segment 5 the longest and a little more than or as long as segment 6, segments 4–6 more or less thickened at each apex, terminal segment simply arcuate.

Pronotum moderately longer than wide, almost parallel-sided; PL/PW 1.13–1.36 (M 1.26), PL/PA 0.95–1.00 (M 0.97), PB/PA 1.12–1.30 (M 1.22); sides almost always parallel from apex to middle, then arcuately narrowed to basal fifth, with basal collar gently arcuate; disc weakly convex, slightly depressed at sides near anterior margin, provided with a pair of weak swellings at sides of apical fourth and centre just behind middle, with coarse and irregular-sized reticulation except for the narrow margins near apex and base, and on discal callosities. Scutellum transversely quadrate, deeply concave in the middle.

Elytra very short, a little wider than long, slightly wider than pronotum; EL/EW 0.88–1.00 (M 0.93), EW/PW 0.95–1.10 (M 1.03); sides with humeri projected latero-forwardly, dilated to basal 9/10 then narrowed to apices in arcuate line, with apices completely rounded; suture distinctly emarginate in sinuate line, bordered throughout; disc almost flattened above, obliquely depressed near suture in basal half to middle of basal third, and rather distinctly depressed near suture behind scutellum, coarsely, somewhat rugosely punctured.

Ventral surface heavily deeply punctured; prosternum gently raised, rugosely reticulate on surface, with inter-coxal process relatively narrow, almost parallel though slightly widened just before furcasternum; meso- and metasterna rather weakly punctured, with inter-coxal process wide, rather suddenly convergent just before apex; abdomen relatively short, weakly arcuate at sides, with anal



Figs. 26–32. Genitalia of *Buddhapania matsumotoi* gen. et sp. nov., from central Thailand. — 26, 27, Median lobe; 28, tegmen; 29, spiculum gastrale; 30, 8th tergite; 31, 8th sternite; 32, ovipositor; 33, spermatheca. — 29–31, ♂; 32, 33, ♀. — 26, Lateral view; 27–29, 32, dorsal view; 30, 31, ventral view.

ventrite widely shallowly emarginate at apical margin, anal tergite concave in the middle of apical margin.

Legs thin, rather short; hind femur markedly compressed throughout, distinctly swollen in apical half; hind tibia slightly sinuate; hind tarsus with 1st segment a little longer than the following two segments combined.

Male genitalia: Median lobe $3/11$ the length of abdomen, long and slender, hardly arcuate in profile; dorsal plate distinctly arcuately emarginate near basal third, strongly divergent to apex which is broadly rounded; ventral plate a little shorter than dorsal plate, with rounded apical part; median struts $3/4$ the length of median lobe. Tegmen with fused parameres, broad, slightly thickened at apical parts, which is a little concave at apical margin and provided with very short setae. Spiculum gastrale long and stout, with apical part strongly armed inwardly, peduncle $2/3$ the length of spiculum gastrale. Eighth tergite rounded trapezi-formed. Eighth sternite transverse fan-shaped, with small concavity in the middle of apical margin.

F e m a l e. Body length: 5.2–7.3 mm (from vertex to abdominal apex).

Body broader on average than in male. Antennae short, barely reaching the apical margin of ab-

dominal tergite 3, gradually thickened towards apical segments, sparsely clothed with pale hairs on basal four segments and also two or three of same hairs on apices of segments 5–9; segment 3 3/5 the length of scape and as long as segment 4, segments 3 and 4 distinctly thickened at each apex, segments 5–9 each more or less dilated apicad, terminal segment elongate ovate. Pronotum with sides more or less constricted behind apex, dilated in a little arcuate line to middle, then rather distinctly arcuately narrowed to basal 3/20; disc provided with irregular-sized coarse punctures, rather largely smooth on the discal swellings. Abdomen arcuate at sides, with anal tergite shallowly concave in the middle. Standard ratios of body parts as follows: HW/PA 0.91–1.08 (M 0.96), HW/PW 0.78–0.96 (M 0.83), FL/FB 0.80–0.96 (M 0.88), FA/FB 0.89–0.95 (M 0.93), PL/PW 0.75–0.95 (M 0.87), PL/PA 1.10–1.31 (M 1.18), PB/PA 1.03–1.28 (M 1.16), EL/EW 0.88–1.00 (M 0.97), EW/PW 0.82–0.93 (M 0.89).

Female genitalia: Ovipositor a little less than a half the length of abdomen; paraproct medium in length, rather broad, with baculi thin and almost straight; coxite moderately convergent apicad, with baculi arcuate; coxite lobe simply ovate, provided with a few short setae; stylus rather distinctly divergent apicad, distinctly smaller than coxite lobe. Spermatheca slender, ordinary comma-shaped though strongly bent near apex, with sinuate duct.

Type series. Holotype: ♂, Phra Buddha (Phuttha) Chai, N14°27'9"/E100°56'37", 50 m in alt., Saraburi Province, Thailand, 22.V.2009, T. MATSUMOTO leg. Paratypes: 36 ♂♂, 26 ♀♀ (including allotype female), same data as for the holotype; 1 ♀, Khao Hin Lek Fai, Hua Hin, Prachuap Khiri Khan Province, Thailand, 18.V.2010, S. TSUYUKI leg. The holotype and the allotype are deposited in the National Museum of Nature and Science, Tsukuba, Japan, and the paratypes are in the private collection of T. MATSUMOTO, S. TSUYUKI and T. NIISATO.

Etymology. The new specific name is dedicated to Mr. Tadayuki MATSUMOTO, who collected the type series of this interesting molorchine species.

Distribution. Central Thailand.

Notes. *Buddhapania matsumotoi* gen. et sp. nov. may be similar in general appearance to the members of *Leptepania* HELLER (HELLER, 1924), but is clearly distinguished from the latter by the opened behind fore coxal cavities rather than the closed behind ones by the pleural processes.

All the type series except one female were collected from dead branches of a shrub (species name is undetermined) at a secondary forest in Phra Buddha (Phuttha) Chai, Saraburi Province of central Thailand. The adult beetles almost always stayed on the narrow twigs mainly at the branched point, and their walking or flying behaviors were not observed in the field. According to the indoor observation, several adults in both male and female often bent the abdomen perpendicularly like the offensive behavior of the ant genus *Crematogaster*. The resting form of this longicorn beetle may be an ant mimic.

Discussion

The genus group as explained in the Introduction section is also classified into two subgroups by the structures of furcasternum of fore coxal cavities (NIISATO, 1986). The subgroup is consisted of the genera *Epania* PASCOE, *Glaphyra* NEWMAN, *Laopania* HOLZSCHUH, *Malayanomolorchus* HAYASHI, *Molochurus* HELLER, *Nadezhdiana* TSHEREPANOV, and has the coxal cavities closed behind in an external appearance due to the well-developed furcasternum and the prosternal process almost always complete and connected with the furcasternum (PASCOE, 1858; NEWMAN, 1840; HOLZSCHUH, 2010; HAYASHI, 1979; HELLER, 1924; TSHEREPANOV, 1976). Another subgroup is consisted of the other three genera *Molorchus* FABRICIUS, *Tsujius* IKEDA and *Molorchoepania* PIC, and has the coxal cavities wide-

ly opened behind due to the less-developed furcasternum and the prosternal process usually very narrow or incomplete (FABRICIUS, 1792; IKEDA, 2001; PIC, 1949).

Buddhapania nov. undoubtedly belongs to the former subgroup since the furcasternum of fore coxal cavities is rather well-developed and completely connected with the prosternal process, though regarding the same subgroup, the new genus has several unique characters, such as the vertical frons, the median longitudinal ridge on the metanotum and the simplification of hind wing veins.

The members of the subgroup almost always provide the produced head with declivous frons which may be an adaptive character caused by the flower visiting habit of adult beetle. It is most probable that the type species of the new genus does not visit flowers as the members of the genus *Leptepania* HELLER do, which also have the vertical frons (HELLER, 1924). For reference, *Leptepania* has no direct relationship with the new genus. The simplification of hind wing veins may be caused by the degeneration of the flight function. According to the observation in the field, the adults of the type species almost always stayed on the host plant and flying specimen were not found left the host. This behavior almost agrees with that of *Glaphyra* (*Yamatoglaphyra*) *hattorii* (OHYASHI). The adults of *G. hattorii* do not only seldomly leave the community of host plant, but also have the same pattern of wing venation as that of the new genus (NIISATO, 2006). The most pronounced character is the median longitudinal ridge on the metanotum as well as the widely dehiscent elytra as an autapomorphy of the new genus. The function of these characters is uncertain, however, there is a possibility that it has some kind of relation with the resting form as bending the abdomen perpendicularly of the adult beetle.

Though it may have the common ancestor of *Epania* or *Glaphyra* regarding the basic structure, the peculiar characters in *Buddhapania* nov. as mentioned above may be acquired through the unique habit of adult beetles.

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要 約

新里達也：タイ中部で発見されたヒゲナガコバネカミキリ族(鞘翅目カミキリムシ科)の新属新種。—— タイ中部からヒゲナガコバネカミキリ族の新属新種 *Buddhapania matsumotoi* gen. et sp. nov. を命名記載した。新属 *Buddhapania* nov. は、ヒゲナガコバネカミキリ属 *Glaphyra* NEWMAN やヒメコバネカミキリ属 *Epania* PASCOE に基本的な形態は一致し、その類縁は近いものと思われる。しかし、後胸背板中央に備える縦隆起、その隆起の存在により左右に開裂する上翅を持つことで、それら近縁属から容易に区別することができる。

この後胸背板中央の縦隆起と開裂する上翅の機能的意義は不明だが、タイプ種の *B. matsumotoi* sp. nov. の成虫は、しばしば腹部を垂直に持ち上げた状態で静止することがあり、これがシリアゲアリの攻撃行動によく似ていることから、アリ擬態の可能性が示唆される。このほかに、頭部前面はほぼ垂直で口器が前方に延びることはなく、その形態は訪花の習性を持たないチビコバネカミキリ属 *Leptepania* に非常によく似ていて、タイプ種もやはり訪花性を持たないのではないかと推測される。さらに、後翅臀脈は単純で $1A_3+2A$ からなり $3A$ 脈を持たないが、この形質はクロツヤヒゲナガコバネカミキリ亜属 *Glaphyra* (*Yamatoglaphyra*) のそれと

一致する。この亜属のタイプ種であるクロツヤヒゲナガコバネカミキリ *G. (Y.) hattorii* の成虫は宿主植物からほとんど離れることもなく、野外で観察された *B. matsumotoi* sp. nov. の行動と共通している点は興味深い。

Buddhapania nov. はその基本的形態を見る限り、ヒゲナガコバネカミキリ属らと共通の祖先を持つことに疑いはないが、おそらく、宿主植物から離れず、飛翔行動をほとんど取らない行動に関与する形態の収斂により、クロツヤヒゲナガコバネカミキリ亜属や、直接の類縁関係を持たないチビコバネカミキリ属に似た形質を獲得したのではないかと思われる。

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