A Study on the Oriental subtribe Pilinurgina Krikken, 1984, with descriptions of a new genus and new subgenus (Coleoptera: Scarabaeidae: Cetoniinae)

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Abstract. Oriental species of the subtribe Pilinurgina Krikken, 1984 (Cremastocheilini) are studied. *Priska thailandica*, a new genus and new species related to *Callynomes* Mohnike, 1873 is described from Thailand, laying far from the distributional area of *Callynomes* Mohnike (Philippines and Sulawesi Island). *Callynomes minettii* Antoine, 2001 occurring in Borneo/Kalimantan is transferred to the newly established genus *Priska* and accommodated in a newly described subgenus *Callynocera*. Relationships between Oriental genera of Pilinurgina Krikken and *Priska* new genus are discussed and taxonomical key to all recently known oriental genera of Pilinurgina, *Priska* new genus and *Priska* (*Callynocera*) new subgenus is presented. Distributional areas of *Callynomes* Mohnike and *Priska* new genus are discussed and new distributional record for *Priska* (*Callynocera*) *minettii* Antoine is given.

INTRODUCTION

The subtribe Pilinurgina was established by (Krikken, 1984). In the Oriental Region, the group is represented by three different genera - *Callynomes* Mohnike, 1873 with 16 known species, *Centrognathus* Guérin, 1840 with 3 species and *Parapilinurgus* Arrow, 1910 with 5 recently recognised species. In the Afrotropical Region, the subtribe is represented by *Pilinurgus* Burmeister, 1842 with 10 species. African *Pilinurgus* was recently revised by (Rojkoff, 2012). Largest Asian genus of Pilinurgina *Callynomes* was revised by (Kobayashi & Sasaki, 2016). The study of Japanese authors concentrates in species occurring across the Philippines. Beside novelties from the Philippines, a species flying in Sulawesi (Indonesia) was also described. Authors refused to classify *Callynomes minettii* Antoine, 2001 described from Borneo with a note that this species is not typical representative of *Callynomes* Mohnike, 1873 and it should be excluded from this genus.

Callynomes minettii Antoine, 2001 is truly different from all *Callynomes* representatives occurring in the Philippines, not only in very simple structure of male genitalia and in completely different external characters, but also in areal of distribution. It was described from Borneo Island belonging to the Great Sundas. Cetoniidae fauna of Borneo/Kalimantan belongs to the Indomalayan distribution model having not much in common with the fauna of the Philippines, excepting Palawan Island in the southwestern part of the archipelago.

Other very interesting cremastocheiline beetle was collected in Thailand. This unknown species belongs also to the subtribe Pilinurgina and it shares a part of morphological characters with *Callynomes minettii* Antoine. Both mentioned species are proposed to be accommodated in a newly described genus which description is given in taxonomical part of this study.

MATERIAL AND METHODS

Following codens of institutional and private collections are used in the text:

KSCP Kaoru Sakai, private collection, Tokyo, Japan;

MNHN Muséum national d'Histoire naturelle, Paris, France;
RMPC Robert Minetti, private collection, La Ciotat, France;
SJCP Stanislav Jákl, private collection, Praha, Czech Republic.

Specimens of the newly described species are provided with red and yellow printed labels, red for HOLOTYPUS, yellow for PARATYPUS. Holotype or paratypes are labelled with sex symbol, number of paratype (on paratype label) and words St.Jákl det. 2018. Label data are cited for the material examined, individual labels are indicated by a double slash (//), individual lines by a single slash (/).

The following specimens were compared with the newly described genus, new subgenus and new species:
Callynomes borealis Kobayashi & Sasaki, 2016; 2 males
Callynomes brevispinus Kobayashi & Sasaki, 2016; 1 male
Callynomes fujiokai Sakai, 1997; 2 males, 2 females
Callynomes luzonica (Schultze, 1916); 2 females
Callynomes meridionalis Kobayashi & Sasaki, 2016; 1 female
Callynomes minettii Antoine, 2001; 4 males
Callynomes niveoguttata Sakai, 1997; 1 male
Callynomes niveosparsa Mohnike, 1873; 1 female
Callynomes palawanica Jákl, 2011; 1 male
Callynomes parva Kobayashi & Sasaki, 2016; 1 male, 2 females
Callynomes sakaii Kobayashi & Sasaki, 2016; 1 male
Callynomes variabilis Kobayashi & Sasaki, 2016; 1 male, 1 female
Parapilinurgus chinensis Krajcik, 2010; 2 males, 7 females
Parapilinurgus masumotoi Nomura, 1977; 1 male, 1 female
Parapilinurgus variegatus Arrow, 1910; 5 males, 13 females
Centrognathus sumatranus Roepke, 1934; 2 females
Specimens are deposited in SJCP.

TAXONOMY

Priska gen. nov.

Type species. *Priska thailandica* new species (by present designation).

Description. Body slender, elongate, parallel, medium-sized 14.0-16.5 mm (excluding pygidium). Bicolored with black head and pronotum and brown/reddish elytra or simply black, covered or not with basal tomentum.

Head with widely, semicircularly expanding clypeus, clypeal apex vertically elevated. Punctation of head fine, its density in frons and clypeus same. Frons with ochre tomentum patches. Antennae black/brown or completely brownish. Pronotum black, lateral sides covered with ochre tomentum. Pronotal punctation fine, its density same as in head. Pronotal length distinctly shorter than width. Pronotal basal tomentum present or not.

Scutellum triangulate, moderately elongated, its apex sharp. Scutellar punctation fine, its base with ochre tomentum.

Elytra nearly parallel sided, elongate, slender. Elytral coloration reddish brown or black, with or without cover of basal tomentum, matte or medially reflected. Ochre to yellow or silvery ochre tomentum abundant. Elytral disc flat, elytral lateral ridge and elytral disc clearly separated by

obtuse or moderately sharp rib. Each elytron with 1-3 very fine or 6 deeply developed striolate lines. Apical calli absent, humeral calli moderately developed. Sutural ridge flat, elytral apex widely rounded.

Pygidium. Flat with central impression or conical with slightly protruding apex. Coloration brownish to black, entirely covered with ochre tomentum. Pygidial punctation dense with horse-shoe or circularly shaped punctures.

Ventrum. Redish brown to black, abdomen and mesosternum with cover of ochre tomentum. Abdomen with abundant tomentum, abdominal impression of males wide and rather deep. Abdominal punctation moderately dense, simple, circularly developed. Mesosternum punctured and striolate, sides with cover of ochre tomentum. Mesosternal plate rather flat, its punctation dense, ochre ornament not present. Mesometasternal process very tiny, not reaching to level of anterior margins of mesocoxae. Prosternum blackish, its striolation or punctation moderately dense. Prosternal ochre ornament missing. Mentum brownish or black, medially sculptured. Prementum large, apically elongated and sharp. Coloration of mentum brownish or black, its punctation very fine, setation absent. All margins of prementum distinctly elevated.

Legs. Rather long and simple, coloration brownish or black. Protibia uni- or bidentate. Both basal protarsomere distinctly shorter than 3rd and 4th. Meso- and metatibia with more or less distinct carina in posterior half bearing tiny or rather long spine. Terminal spurs of meso- and metatibia long and sharp. Generally legs only finely sculptured which causes rather glossy appearance.

Genitalia. Very simply structured (Figs. 4-5, 9-10).

Differential diagnosis. Several characters can be used for the separation of the newly described genus from *Callynomes* Mohnike, which seems to be the closest relative. I. The clypeus is widely, semicircularly expanding. In *Callynomes* Mohnike the clypeus nearly straight. II. The antennal scapus enlarged, its apical margin is much wider than the base. In *Callynomes* just slightly conically enlarged. III. The pronotal length distinctly shorter that width. In *Callynomes* the pronotum is nearly hexagonally shaped, width and length approximately same. IV. The elytral disc flat, lateral ribs separating elytral ridge and elytral disc developed. In *Callynomes* elytral ribs absent, disc gradually merging into lateral margins. V. The elytral disc with one to six more or less distinctly developed striolae lines. In *Callynomes* usually only the juxtasutural line present. VI. The prementum is large, apically elongate, finely punctured, reflected, setation missing. In *Callynomes* the prementum is small, rugosely punctured or striolate, usually oval or circular, bearing dense and rather long setation. VII. Legs elongated, simply developed, its punctation or striolation very fine, with glossy appearance. In *Callynomes* moderately long and thickened legs with dense punctation or striolation, not reflected. VIII. Protarsal outer claw without dent. In *Callynomes* with typical dent in outer protarsal claw. IX. First two basal protarsomere very short, shorter than remaining. In *Callynomes* two basal protarsomere only indistinctly shorter or same as protarsomere 3th-4th. X. Male parameres very simply developed. In *Callynomes* with rather complicated structure.

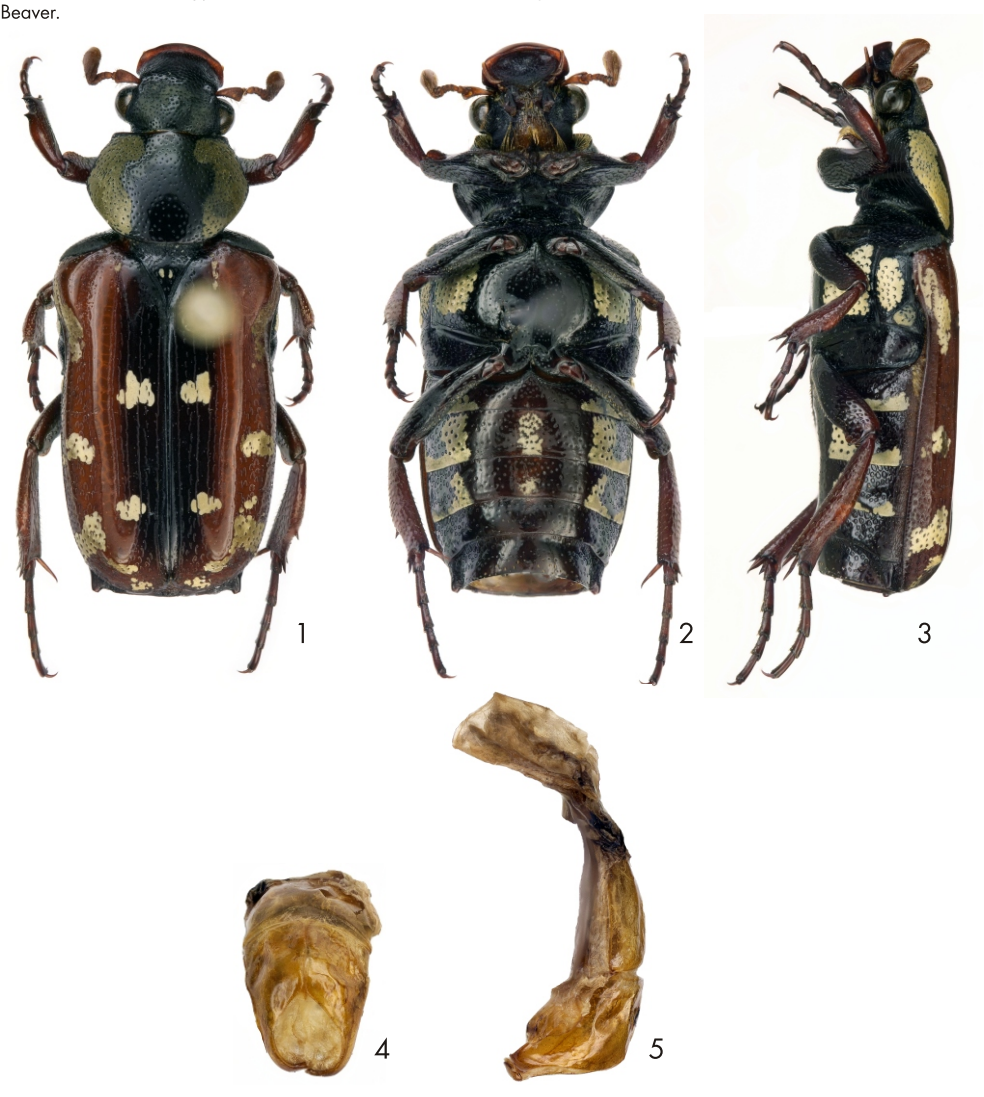
Etymology. Named after my wife Priska. The generic name is a femininum.

***Priska thailandica* new species**

(Figs. 1-5)

Type locality. Thailand, Chiang Mai.

Type material. Holotype ♂ (SJCP) labelled: THAILAND/Chiang Mai 300 m/In house (handwritten) 17.VII.73/R. A. Beaver.



Figs. 1-5. *Priska thailandica* sp. nov.: 1- male habitus (dorsal aspect); 2- male habitus (ventral aspect); 3- male habitus (lateral aspect); 4- male genitalia (dorsal aspect); 5- male genitalia (lateral aspect).

Description of male holotype. Body bicolored, head and pronotum blackish, elytra reddish to dark brown. Head, pronotum, scutellum, elytra, pygidium, abdomen and mesosternum with silvery ochre ornament. Basal tomentum absent. Body shining. Size 14.3 mm (excluding pygidium).

Head. Frons black, clypeus dark brown, clypeal apex reddish. Punctation rather fine in frons,

much denser in clypeus. Clypeus widely, semicircularly expanding. Clypeal apex nearly vertically elevated. Frons with cover of silvery ochre tomentum. Antennae redish with simple setation. Scapus enlarged, its apex three times wider than base.

Pronotum. Black, simply and finely punctured. Laterally with wide silvery coloured ochre, ornament vitta. Posterolateral margins broadly rounded, anterolateral margins moderately sharp. Pronotal length shorter than its width with widest point approximately at midlength. Border of lateral margins not developed.

Scutellum. Black, excepting disc with rather dense punctation. Disc glabrous with two tiny patches of ochre ornament. Apex sharply elongate.

Elytra. Elongated, nearly parallel running. Disc dark brown, sides and lateral ribs reddish, lateral ribs reflected. Disc of elytron with six distinctly developed striolate lines running nearly throughout total elytral length. Lateral ribs very wide, obtusely developed, completely impunctate, reflected. Lateral ridge with fine horse shoe shaped punctation. Humeral calli absent, apical calli obtuse and impunctate. Elytral disc with two pairs of silvery ochre maculae, one pair in anterior, second in posterior elytral half. Laterally each side with three irregularly shaped maculae in lateral ridge and two maculae placed near elytral apex. Elytral apex broadly rounded. Sutural ridge flat, not protruding. Elytral setation completely missing.

Propygidium. Propygidial plate clearly visible, striolate throughout total length. Propygidial spiracles rather long and sharp.

Pygidium. Semioval, coloration brownish, margins black. Each lateral side in midlength with ochre tomentum macula. Punctures large, circularly shaped, concentration very dense. Disc distinctly impressed.

Ventrum. Disc of abdomen and mesosternum dark brown, sides deep dark brown to blackish. Abdomen coarsely punctured, punctation in disc finer. Abdominal impression broad and deep. Fifth abdominal segment constricted. Ventrites 2-4 with ochre ornament placed laterally. Other patches of ornament placed in abdominal impression. Mesosternum blackish, metasternal plate dark brownish. Mesosternal punctation thinner than in abdomen, its ornamentation reduced to anterolateral half of sides. Mesometasternal process very small and not reaching level of anterior margins of mesocoxae. Prosternum and mentum black, densely punctured and striolate. Prementum large, nearly triangularly shaped, its punctation very fine, premental margins distinctly elevated.

Legs. Redish to brown, moderately long. Protibia bidentate. Protarsal outer claw simple, without dent. Meso- and metatibia with carina and sharp spine in tibial posterior half. Tarsi reddish to brownish, five-segmented. First two basal segments of protarsi short, distinctly shorter than rest. General appearance of tibia and tarsi glossy.

Genitalia. Structure of male parameres very simple (Figs. 4-5).

Differential diagnosis. *Priska thailandica* new species can be very easily recognised from all representatives of Pilinurgina by bicolored body (black head and pronotum and brownish to reddish elytra) and silvery ochre abundant ornament covering parts of head, pronotum, scutellum, elytra, pygidium, abdomen and mesosternum. The following complex of morphological characters is of diagnostic importance for the newly described species: Head widely, laterally expanding, its clypeal apex highly elevated; antennal scapus very enlarged; pronotal length shorter than its width; bicolored elytra with 6 striolae lines in each elytron; presence of wide, completely impunctate, shining lateral elytral ribs; pygidial disc impressed; prementum large, nearly glabrous, triangularly shaped with elevated margins and complete absence of setation; moderately long simple legs with glossy appearance; simply developed

protarsal outer claw (non dentate); two basal protarsomere distinctly shorter than others; simply structured male parameres (Figs. 4-5).

Etymology. Named and devoted to my wife Priska for her never ending support in entomology.

Distribution. Thailand, Chiang Mai.

Diagnosis of nominotypical subgenus of *Priska* gen. nov.

Type species. *Priska* (*Priska*) *thailandica* new species.

Diagnosis. The following complex of characters are of diagnostic importance: body bicolored with black head and pronotum and reddish/brown elytra; head, pronotum, scutellum, elytra, pygidium, abdomen and mesosternum with abundant silvery ochre ornament; clypeus widely, laterally expanding; clypeal margin nearly vertically and highly elevated; antennae reddish; antennal scapus distinctly enlarged apically; pronotum with broad laterally placed silver vitta; length of pronotum shorter than its width; elytra with wide, obtuse, completely impunctate and reflecting lateral ribs; each elytron with six striolate lines running nearly throughout total elytral length; elytral lateral ridge steep; pygidium with rugose and dense punctation, central impression and laterally placed pair of ochre maculae; abdomen with deep and wide impression (in male); prementum large, triangularly shaped with elongate apex, very finely punctured, reflecting; permental margins moderately elevated; legs redish, simply developed; protibia bidentate; two basal protarsomeres nearly twice shorter than 3rd and 4th; outer claw of protarsi without dent, simple; meso- and metatibia with carina and very sharp spine in tibia posterior half; male parameres very simple (Figs. 4-5).

Priska (*Callynocera*) new subgenus
(Figs. 6-10)

Type species. *Callynomes minettii* Antoine, 2001 (by present designation).

Description. Body slender, elongate, elytra nearly parallel. Coloration black with basal tomentum and ochre to yellow ornament. Size 15.0-16.5 mm (excluding pygidium).

Head. Black, frons with laterally placed ochre tomentum. Clypeus with wide lateral expansion. Punctation dense, circularly shaped, in frons its density higher. Diameters of punctures same or larger than interspaces. Apical margin of clypeus rounded, highly elevated. Antennae brownish, scapus dark brown. Scapus apically enlarged.

Pronotum. Black with basal tomentum, sides with ochre to yellow ornament. Punctation rather dense, its structure similar to punctation in head. Pronotal length shorter that pronotal width. Widest pronotal point approximately in anterior half. Sides not bordered, anterolateral margins sharp.

Scutellum. Black, triangularly shaped, in apex sharply elongated. Scutellar base with patch of ochre ornament.

Elytra. Black, nearly parallel, subhumeral emargination shallow. Yellow to ochre ornament abundant in both elytral halves. Disc with juxtasutural striolate line and irregularly shaped striolation or with juxtasutural line and 3-4 additional indistinctly developed striolate lines. Elytral disc not merging gradually into lateral margins, but clearly separated by obtuse ribs. Punctation

of lateral ridge rather dense, most of punctures horse shoe shaped. Sutural ridge flat. Humeral and apical calli obtuse. Apex of elytron broadly rounded.

Propygidium. Black with dense striolation. Propygidial spiracles distinctly developed, but obtuse.

Pygidium. Black with irregular cover of yellowish ornament. In front of apex with constriction, pygidial apex slightly drawn out. Punctation dense.

Ventrum. Black, reflecting. Large part of abdomen and sides of mesosternum with cover of ochre to yellow ornament. Abdominal impression of males shallow, but rather wide. Punctation moderately dense. Metasternal plate black, shining, longitudinally graved. Mesometasternal process small, not reaching midlength of mesocoxae. Prosternum and mentum black, finely punctured, ornament missing. Prementum black, large, shining, hexagonal with elongate and moderately sharp apex.

Legs. Black, rather long, slender, reflecting. Protibia unidentate or bidentate, posterior teeth if present, always very reduced. Protarsi five segmented. Both basal protarsomere very short, slightly shorter than protarsomere 3rd and 4th. Meso- and metatibia with reduced carina in posterior half.

Genitalia. Structure of male parameres very simple (Figs. 9-10).

Variability. Protibia of males uni- or bidentate. Dorsal and ventral ochre ornament different in each male. In other respects (except of size) nearly identical.

Sexual dimorphism. Female remains unknown.

Differential diagnosis. From nominotypical subgenus, the new subgenus can be distinguished in following characters: I. Dorsal side of *Callynocera* new subgenus completely black with cover of basal tomentum. In nominotypical subgenus with brown/redish elytra missing any basal tomentum, reflecting. II. Antennal scapus only slightly enlarged, but more strongly in nominotypical subgenus. III. Elytral disc with juxtasutural striolate line or additional, but very indistinctly developed striolate lines, but with six clearly developed striolate lines in nominotypical subgenus. IV. elytral rib much more distinct (wide and reflecting) in nominotypical subgenus. V. Pygidium with constriction in front of apex, apex slightly drawn out in *Callynocera*. In nominotypical subgenus pygidium with large central impression and lateral declivities, its apex rounded and not protruding.

Etymology. Composed of names of the genera Callynomes a Clinterocera, which are habitually very similar to the new subgenus. The subgeneric name of newly described subgenus is a femininum.

Distribution. Malaysia: Borneo Island; Indonesia: Kalimantan (new record).

***Priska* (*Callynocera*) *minettii* (Antoine, 2001)**

(Figs. 6-10)

Callynomes minettii Antoine, 2001: 21, figs. 33-37 (original description); Legrand & Chew Kea Foo, 2010: 92, figs. 268-269 (habitus, black variation, distribution); Jákl, 2011: 213 (descriptions); Kobayashi & Sasaki, 2016: 50 (revisional work).

Type locality. Malaysia, Borneo Island, Sabah, Mount Trus Madi.

Type material. Holotype ♂ (MNHN) labelled: Borneo, Sabah, Mt. Trus Madi. One paratype male (RMCP), 3 paratype males (KSCP) labelled: same as holotype.

Additional material examined: 1 ♂ (SJCP) labelled: Malaisie or./SABAH/Ranau/18/V/O5/ S. Chew leg (all handwritten)//Callynomes/minettii/ANTOINE/J.Ph. Legrand det. VII.2005; 1 ♂ (SJCP) labelled: East Malaysia/Sabah-Borneo/Mt. Trus Madi/V.-2007/S Chew leg; 1 ♂ (SJCP) labelled: MALAYSIA, Sabah, Borneo/MT. TRUS MADI/V.2001/local collector leg; 1 ♂ (SJCP) labelled: INDONESIA, XII. 2016/SW Kalimantan, MADI vill./env., MT. BAWANG, 1000-/1500m, local collector leg **(new country record)**.

Distribution. Malaysia - Borneo: Sabah; **Indonesia** - SW Kalimantan: Mt. Bawang.

Note. Female of this species stays unknown.

Figs. 6-10. *Priska* (*Callynocera*) *minettii* (Antoine, 2001): 6- male habitus (dorsal aspect); 7- male habitus (ventral aspect); 8- male habitus (lateral aspect); 9- male genitalia (dorsal aspect); 10- male genitalia (lateral aspect).

TAXONOMICAL KEY TO GENERA AND SUBGENERA OF ORIENTAL PILINURGINA KRIKKEN, 1984

1 (6). Clypeus more or less parallel, sides not laterally expanding. Prementum small or nearly missing, usually rugosely punctured or striolated, very often setose. Antennal scapus only moderately enlarged. Elytral disc merging gradually into lateral margins, elytral disc and lateral ridge not separated by rib. Legs short or medially short. Tibial structure usually with dense striolation or punctation.

2 (3). Body elongate, nearly parallel-sided. Pygidium usually apically protruding, sometimes with constriction in front of its apex. Tibia cylindrically developed. Outer claw of protarsi with denticle. Male parameres never simply structured. Species from the Philippines and Sulawesi. ***Callynomes*** Mohnike, 1873

3 (4). Body wide, especially elytra. Pygidium simple, flat. Outer claw of protarsi missing denticle. Male parameres simply developed. Species from Sumatra and continental Asia.

4 (5). Tarsi very short and thickened. Length of protarsomeres (except of terminal one) approximately same. Prementum present, but small. Head with lateral declivities in females and horns in males. Apical margin of clypeus drawn out upwards into rather sharp lobe. Ventral and dorsal setation missing. Elytral ribs not developed. Pronotal length shorter than its width. ***Centrognathus*** Guérin, 1840

5 (4). Tarsi elongate, both basal protarsomere approximately twice shorter than 3rd and 4th. Prementum very reduced. Head without declivities or horns. Clypeal apex rounded and elevated. Each elytron with 2-3 obtuse ribs, sometimes only fragmentally developed. Pronotal width and length approximately same. ***Parapilinurgus*** Arrow, 1910

6 (1). Clypeus laterally expanding, its apex elevated. Prementum large, triangularly shaped, its punctation very fine, appearance glossy, without setation. Antennal scapus strongly enlarged. Elytral disc and lateral ridge separated with lateral ribs, never gradually merging into lateral margins. Legs elongated, reflected, with only fine striolation and punctation. ***Priska* gen. nov.**

7 (8). Body bicolored, with black head and pronotum and redish/brown elytra. Both body sides lacking basal tomentum, general appearance glossy. Elytral disc with six rather deep striolate lines in each elytron. Lateral rib wide, obtuse, impunctate, reflected. Pygidium with central impression, sides with small declivity, apical margin rounded. Legs redish. Recently known only from Thailand. ***Priska* (*Priska*) subgen. nov.**

8 (7). Body uniformly black, covered with basal tomentum and decorated with ochre ornament. Elytra with only juxtasutural striolae lines or with additional 2-3 fragmentally, indistinctly developed striolate lines in each elytron. Pygidial apex usually protruding, sometimes heading upwards. Pygidial impression not developed. Legs black, simple, reflected. Recently known only from Malaysian and Indonesian parts of Borneo Island. ***Priska* (*Callynocera*) subgen. nov.**

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