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Description of two new species of *Protaetia* Burmeister, 1842 from the Philippines from rarely collected subgenera *Lawangia* Schenkling, 1921 and *Protaetiola* Mikšič, 1963 (Coleoptera: Scarabaeidae: Cetoniinae)

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Abstract. Distribution of two subgenera of *Protaetia* Burmeister, 1842 is updated by description of two new species and several new records of already known species. Both newly described species belong to rarely collected subgenera of *Protaetia* Burmeister, 1842, *Lawangia* Schenkling, 1921 and *Protaetiola* Mikšič, 1963. In subgenus *Lawangia* Schenkling, 1921, *Protaetia* (*Lawangia*) *jeanphilippei* sp. nov. is described from Panay Island, in subgenus *Protaetiola* Mikšič, 1963, *Protaetia* (*Protaetiola*) *brookiana* sp. nov. is described from Palawan Island. Newly described species are compared with their closest congeners, both species are pictured and their diagnoses are given. Updated checklist of both subgenera is given.

INTRODUCTION

Distribution areas of subgenera *Lawangia* Schenkling, 1921 and *Protaetiola* Mikšič, 1963 are studied. Representatives of both subgenera belong to rather rarely collected flower beetles. Very rarely collected representatives of subgenus *Lawangia* Schenkling, 1921 occur in Thailand, Laos, Vietnam and South China (3 species), in Java, Bali and Sumatra (1 species) and in Mindoro Island in Philippines (1 species). Study of single male collected recently in Panay Island (the Philippines) revealed that species is different from its closest relative from Mindoro Island and its description is given in taxonomical part of this work.

Second species of *Protaetia* Burmeister, 1842 also belonging to unknown species belongs to subgenus *Protaetiola* Mikšič, 1963. Distribution of this subgenus is larger, encompassing nearly whole continental SE Asia, across Malayan Peninsula and part of the Philippines. Two species are known from Great Sundas and one from Sumba and Flores Islands belonging to Lesser Sundas, which already belong to transitional fauna between Oriental and Australian Regions. Two species are currently known from the Philippines, one occurring in Luzon, second in Negros. Study of single male examined by author which was collected in Palawan Island revealed that the insect is new for science. It is described and compared with its congeners from Negros and Luzon Islands in second part of this work.

MATERIAL AND METHODS

The following codens of institutional and private collections are used in the text:
SJCP Stanislav Jákl private collection, Praha, Czech Republic.

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

RESULTS

Protaetia (*Lawangia*) Schenkling, 1921

Lawangia Schenkling, 1921: 264 (replacement name for *Hybothorax* Kraatz, 1898); Mikšič 1979: 222 (generical key); 1979: 126 (monograph); 1982: 14 (key), 126 (monograph); Krajčík 1998: 34 (catalogue); Legrand 2018: 3 (= *Protaetia* Burmeister, 1842).
Protaetia (*Miksicoprotaetia*) Legrand & Chew Kea Foo, 2010: 29 (original description); Jákl 2020: 24 (*Protaetia* of Indochina); 2021: 310 [= *Protaetia* (*Lawangia*) Schenkling, 1921]; Type species *Protaetia acutissima* Mohnike, 1871 (designated by Legrand & Chew Kea Foo 2010: 29).
Protaetia (*Lawangia*) Schenkling, 1921: Jákl 2021: 310 (stat. rest.).

Type species: *Protaetia acutissima* Mohnike, 1871.

Protaetia (*Lawangia*) *jeanphilippei* sp. nov.
(Figs. 1-5)

Type locality. Philippines, Panay Island, Antique Province, Mount Madjaas.

Type material. Holotype (♂) (SJCP) labelled: PHILIPPINES, PANAY I. / Antique Prov., II. 2018 / MT. MADJAAS / local collector leg.

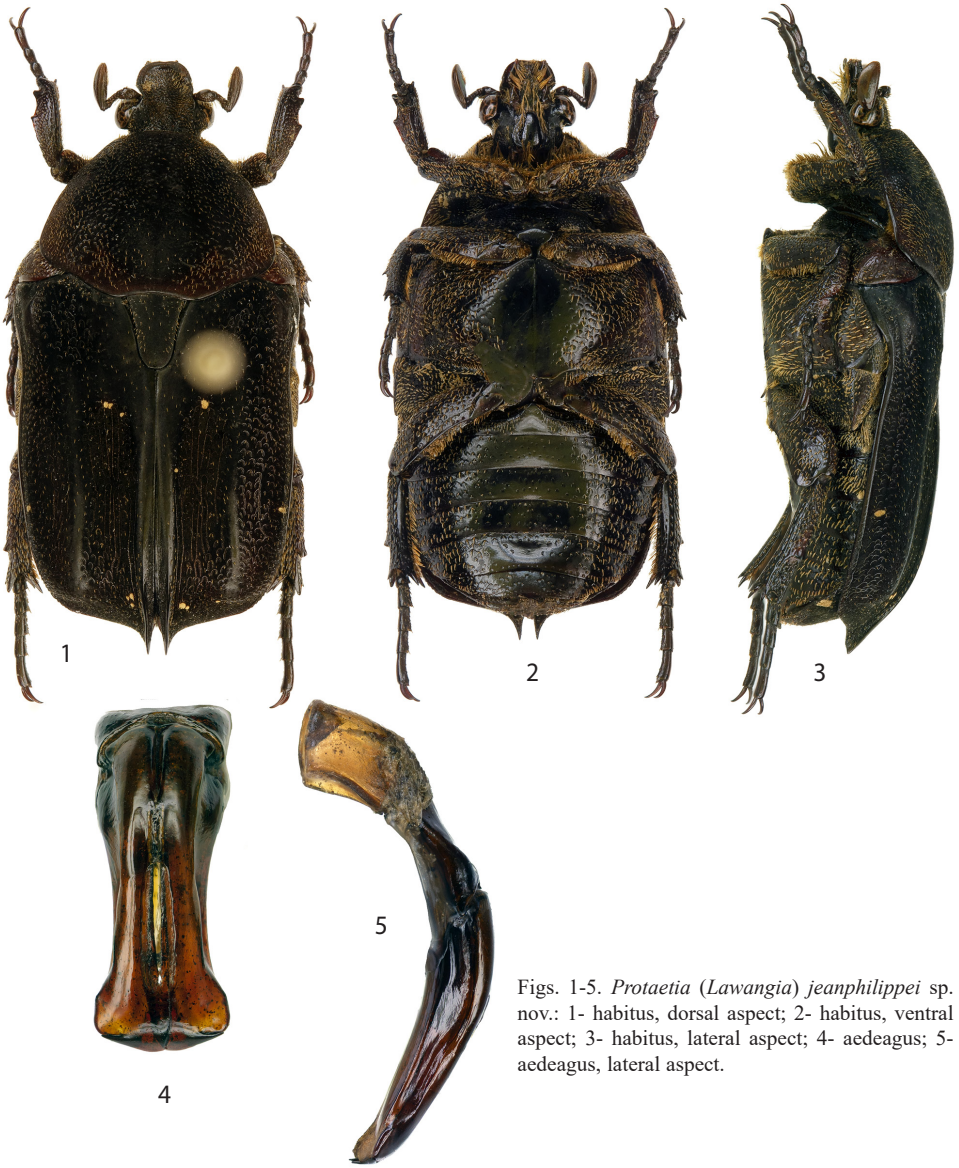
Description of holotype. Dark plum to black with extremely reduced whitish ornament. Body size 15.8 mm (including apex of sutural ridge).

Head. Black, finely shining. Length of frons and clypeus approximately same. Frons with transversally running wrinkles and moderately long yellow to reddish setation. Clypeus with deep and dense, circularly shaped punctures, lateral patches of white ornament and indistinctly developed setation. Apex of clypeus nearly vertically elevated, rounded with very indistinct emargination. Antennae brownish, club slightly shorter than stalk.

Pronotum. Coloration dark brown, in base and posterolateral angles paler, completely covered with tomentum. From posterolateral angles rather sharply narrowning to apex. Posterior half of pronotal disc nearly impunctate, lateral sides striolated, rest with combination of horse-shoe shaped or semicircularly shaped punctures. Setation very short, present mostly in sides, its coloration dark yellowish. Apical half of pronotal disc with pair of minute yellowish maculae, rest of pronotum immaculate. Sides with very low border.

Scutellum. Black without tomentum, immaculate. Base and sides with few setiferous punctures. Apex broadly rounded.

Elytra. Black, excepting glabrous sutural ridge and apical half of ribs, with complete cover of tomentum. Yellowish ornament extremely reduced. Each elytron with three minute maculae, one in basal half beside sutural ridge (bordering with striolation of disc), second



Figs. 1-5. *Protaetia* (*Lawangia*) *jeanphilippei* sp. nov.: 1- habitus, dorsal aspect; 2- habitus, ventral aspect; 3- habitus, lateral aspect; 4- aedeagus; 5- aedeagus, lateral aspect.

in apex beside sutural ridge (in level of apical calli), third slightly transversally elongated macula beside lateral border, approximately in two posterior thirds of elytral length. Disc with six longitudinally running striolae lines (some only fragmentally developed), lateral ridge and part of apex mostly with horse- shoe shaped punctures. Very short and sparse setae present throughout total length, its coloration yellow. Both calli obtuse. Sutural ridge elevated and sharp in apical half, its protrusion over elytral apex long and sharp.

Pygidium. Brownish to black anterolateral angles with patch of yellow ornament. Striolation moderately dense and deep.

Ventrum. Black to dark brown, yellow ornament extremely reduced into two tiny maculae placed in posterolateral margins of first and second ventrite, one very minute patch in anterior margins of metacoxae and few minute maculae in anterolateral sides of prosternum. Abdomen with broad but very flat impression, its apex sharply constricted. Punctation of abdomen horse- shoe shaped, very deep and dense in sides, abdominal disc with smaller and much sparser punctures. Metasternal plate impunctate, rest of metasternum striolated. Dark yellowish setation longest in abdominal sides and sides of metasternum. Mesometasternal process wider than long, its apex obtusely rounded.

Legs. Femora, tibiae and tarsi dark brown to black, rather short. Tibiae and femora with yellowish setation. Protibia tridentate, not equidistant. Mesotibia with carina in half of length, metatibia carinate in posterior third.

Genitalia. Similar to other representatives of subgenus, apical tooth of paramere absent (Figs. 4-5).

Sexual dimorphism and variability. Hitherto only holotype male is known.

Differential diagnosis. Newly described species differs from *Protaetia* (*Lawangia*) *bruvier*i Legrand, 2018 and also from other representatives of subgenus in smaller size, extremely reduced dorsal ornament, nearly complete cover of dorsal tomentum and differently shaped male aedeagus.

Etymology. Named after my friend and colleague Jean-Philippe Legrand (Dammarie sur Loing, France), who improved our knowledge about rarely collected representatives of *Lawangia* Schenkling, 1921.

Distribution. Philippines, Panay Island, Mount Madjaas.

Updated checklist of *Protaetia* (*Lawangia*) Schenkling, 1921 species

Protaetia (*Lawangia*) *acutissima* Mohnike, 1871	Indonesia: Sumatra, Kalimantan, Java and Bali Islands; Malaysia: Borneo Island
Protaetia (*Lawangia*) *binghami* Arrow, 1910	North Thailand; Tennaserim
Protaetia (*Lawangia*) *bruvieri* Legrand, 2018	Philippines: Mindoro Island
Protaetia (*Lawangia*) *gillesi* Legrand, 2013	South China: Yunnan
Protaetia (*Lawangia*) *jeanphilippei* sp. nov.	Philippines: Panay Island
Protaetia (*Lawangia*) *laotica* Legrand, 2013	South Laos; South Vietnam

Note. Finding of *Protaetia* (*Lawangia*) *acutissima* Mohnike, 1871 in Bali and Sumatra Islands represents new island records with following data: 13 ♂♂, 3 ♀♀ (SJCP) labelled: INDONESIA, W. Sumatra / HARAU VALLEY, 800 m alt. / ca 15 km N Payakumbuh / V.

2010, local collectors leg. **(new island record)**; 2 ♂♂, 1 ♀ (SJCP) labelled: Indonesia, BALI ISL., 600 m / cca 10 km N of NEGARA / 11. 2005, local collectors lgt. **(new island record)**.

Protaetia (*Protaetiola*) Mikšič, 1963

Protaetia (*Protaetiola*) Mikšič, 1963: 360 (original description), 344 (key); 1965: 105 (diagnosis); 1987: 472 (monograph); Krajčík 1998: 47 (catalogue); Sakai & Nagai 1998: 286 (iconography); Legrand & Chew Kea Foo 2010: 35 (Cetoniidae of Sabah); Krajčík 2011: 38 (Cetoniidae of China); Jákl 2018: 300 (Cetoniidae of Lesser Sundas); 2020: 40 (*Protaetia* of Indochina).

Type species: *Cetonia multiguttulata* Mohnike, 1873.

Protaetia (*Protaetiola*) *brookiana* sp. nov.
(Figs. 6-10)

Type locality. Philippines, South Palawan, near Brooks Point.

Type material. Holotype (♂) (SJCP) labelled: Near Brooks / Point / S. Palawan / Philippines / VIII. - X. 1993.

Description of holotype. Olive green with fine metallic lustre. Dorsum with numerous white maculae, ventrum coppery and strongly shining. Body size 17.0 mm (excluding pygidium).

Head. Frons black with cover of tomentum, clypeus coppery without tomentum. Punctation fine, approximately circularly shaped, punctation of clypeus slightly denser than in frons. Lateral declivities clearly visible. Apex of clypeus nearly vertically elevated, its apex with very shallow emargination. Ornament and setation absent. Antennal stalk black, club dark brown. Length of club and stalk same.

Pronotum. Dark olive green, anterior half and lateral borders coppery. Posterior half of disc with two pairs of small, whitish maculae, between disc and sides with other two, small maculae approximately in middle part of each pronotal side. Sides with fragmentally developed vitta. Punctation very fine and sparse, posterolateral angles with short, rather sparse striolation. Setation absent.

Scutellum. Dark olive green, completely covered with tomentum. Impuncate and immaculate.

Elytra. Coloration dark olive green, completely covered with tomentum. Excepting subscutellar part with numerous, irregularly shaped, whitish maculae throughout total elytral length. Posterior half of disc with five longitudinally running lines of horse- shoe shaped punctures in each elytron. Lateral ridge with more irregularly shaped lines of slightly finer horse- shoe shaped punctures. Elytral apex with more or less semicircularly shaped punctures. Two posterior thirds of sutural ridge sharply elevated and protruding far over elytral apex. Humeral calli not developed, apical calli very obtuse. Apex of elytron slightly dentate. Setation absent.

Pygidium. Coloration brownish, white patch in each anterolateral margin. Striolation rather fine.

Ventrum. Abdomen and metasternum coppery and strongly reflected, prosternum and mentum black with milder lustre. Abdominal impression shallow but broad, constriction

Figs. 6-10. *Protaetia* (*Protaetiola*) *brookiana* sp. nov.: 6- habitus, dorsal aspect; 7- habitus, ventral aspect; 8- habitus, lateral aspect; 9- aedeagus; 10- aedeagus, lateral aspect.

of abdomen very sharp. Each ventrite with two white maculae placed in sides, one beside posterior, second beside anterior margins. Anal ventrite immaculate. Posterior margin of metasternum with two, white maculae, one in posterolateral angle, second in middle part of

metasternum. Prosternum with two, small maculae in middle part of each side. Abdominal sides with horse-shoe shaped punctation, rest of abdomen impunctate. Metasternum striolated, metasternal plate impunctate, prosternum striolated. Mesometasternal process wider than long, its apex broadly rounded. Metasternal sides and prosternum with medially dense and long white setation.

Legs. Femora and tibiae coppery, especially femora in ventral side strongly shining. Tarsi black. Protibia bidentate, meso- and metatibia with carina in posterior half of length.

Genitalia. Structured as all other representatives of *Protaetiola* Mikšič, 1963 (Figs. 9-10).

Variability and sexual dimorphism. Hitherto only male holotype is known.

Differential diagnosis. Two species of studied subgenus are known from the Philippines, *Protaetiola mohagani* Legrand & Chew Kea Foo, 2004 described from Negros Island and *Protaetiola multiguttulata* (Mohnike, 1873) from Luzon. Species from Negros can be easily separated by black both body sides, larger size, absence of lateral vittae of pronotum, much sparser elytral punctation, very reduced maculation of elytra and differently shaped mesometasternal process (length and width approximately same, but wider than long in new species). Species from Luzon can be separated in usually bicolored dorsum (uniformly dark olive green in new species), reduced maculation of elytra (10-12 maculae, but over 25 in new species), not that expressed horse- shoe shaped punctation of elytra, not that sharp constriction of abdomen in male and differently structured male parameres.
Generically is fauna of Palawan closer to Great Sundas than to fauna of the Philippines. From *Protaetiola conspersa* Janson, 1874 flying in Kalimantan, Sumatra and Malayan Peninsula can be newly described species distinguished in different coloration of dorsum (dark olive green in new species, but chestnut brown in its congener), in presence of fragmentally developed lateral vittae of pronotum (absent in *P. conspersa* Janson), in structure of elytral punctation (forming regular, longitudinally running lines of horse- shoe shaped punctures in newly described species) and differently shaped aedeagus of male.

Etymology. Named after Brook's Point in Palawan Island, type locality of newly described species.

Distribution. Philippines: Palawan Island.

Updated checklist of *Protaetia* (*Protaetiola*) Mikšič, 1963 species

Protaetia (*Protaetiola*) *brookiana* sp. nov.	Philippines: Palawan Island
Protaetia (*Protaetiola*) *candezei* (Lansberge, 1880)	Indonesia: Flores and Sumba Islands
Protaetia (*Protaetiola*) *caudata* Arrow, 1910	Northeast India, Bhutan, South China, Myanmar, Thailand, Laos, Vietnam
Protaetia (*Protaetiola*) *conspersa* Janson, 1877	Malaysia: Malay Peninsula, Borneo Island; Indonesia: Sumatra and Kalimantan Islands

Protaetia (*Protaetiola*) *longipennis* Arrow, 1910	Myanmar
Protaetia (*Protaetiola*) *mohagani* Legrand & Chew Kea Foo, 2004	Philippines: Negros Island
Protaetia (*Protaetiola*) *multiguttulata* (Mohnike, 1873)	Philippines: Luzon Island
Protaetia (*Protaetiola*) *pseudohageni* Mikšič, 1963	Indonesia: Java and Bali Islands

Note. Finding of *Protaetia* (*Protaetiola*) *candezei* (Lansberge, 1880) in Sumba Island, *Protaetia* (*Protaetiola*) *pseudohageni* Mikšič, 1963 in Bali Island and *Protaetia* (*Protaetiola*) *conspersa* Janson, 1877 in indonesian Kalimantan represents new island records with following data:

***Protaetia* (*Protaetiola*) *candezei* (Lansberge, 1880):** 8 ♂♂, 4 ♀♀ (SJCP) labelled: INDONESIA, Lesser Sundas / SUMBA I., Lewa District / S of Langgarilu vill., XII. / 2016, local collector leg., **(new island record)**.

***Protaetia* (*Protaetiola*) *pseudohageni* Mikšič, 1963:** 4 ♂♂, 3 ♀♀ (SJCP) labelled: Indonesia, Bali isl. / NEGARA ENV., 600 m / 11. 2004, local collectors lgt., **(new island record)**.

***Protaetia* (*Protaetiola*) *conspersa* Janson, 1877:** 1 ♂, 1 ♀ (SJCP) labelled: INDONESIA, V. 2017 / SW Kalimantan, 1000- / 1500 m, MT. BAWANG / Madi vill. env., local collector leg., **(new island record for Indonesia)**.

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