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A contribution to knowledge of *Chalcoprotaetia* Mikšič, 1963 and *Hemiprotaetia* Mikšič, 1963 (Coleoptera: Scarabaeidae: Cetoniinae)

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Taxonomy, new status, new species, Scarabaeidae, Cetoniinae, *Protaetia*, *Hemiprotaetia*, *Chalcoprotaetia*, Philippines, Luzon Island.

Abstract. Cetoniine genus *Hemiprotaetia* Mikšič, 1963 and subgenus of *Protaetia* Burmeister, 1842 -*Chalcoprotaetia* Mikšič, 1963 are studied. Study of representatives of both taxa, especially aedeagi of their males revealed that representatives of *Hemiprotaetia* Mikšič, 1963 currently recognised as valid genus in Cetoniini and representatives of *Chalcoprotaetia* Mikšič, 1963, currently recognised as a subgenus of *Protaetia* Burmeister, 1842 stay much closer than it was supposed. Also their distribution seems to be very similar, both are endemical to northern part of Philippines, mainly to Luzon Island. Intermediate species habitually imitating representatives of *Chalcoprotaetia* Mikšič, 1963, but in structure of male aedeagus very similar with *Hemiprotaetia* Mikšič, 1963 was collected in Luzon Island. It is here compared with currently known *Hemiprotaetia* Mikšič, 1963 and *Chalcoprotaetia* Mikšič, 1963 species and described as *Protaetia* (*Chalcoprotaetia*) *sierramadrensis* sp. nov. Based on study of several major characters in *Hemiprotaetia* Mikšič, 1963 and following concept of most of current researchers of Cetoniini, it is here proposed to threat this genus as a subgenus of *Protaetia* Burmeister, 1842. *Protaetia* (*Hemiprotaetia*) *madjaasica* sp. nov., cohabiting with *Protaetia* (*Hemiprotaetia*) *boudanti* (Arnaud, 1992) in Panay Island is compared with its congeners and described as new to science.

INTRODUCTION

In 1963 Mikšič established new subgenus *Hemiprotaetia* and accomodated here two historically known species, *Protaetia dubia* Wallace, 1868 and *Protaetia isarogensis* Moser, 1917. The same author designated *Cetonia dubia* Wallace, 1868 as a type species of newly described subgenus of *Protaetia* Burmeister, 1842. In 1973 same author raised subgenus to genus level and the same treatment received *Hemiprotaetia* in Mikšič's monograph in 1982. Only three species are currently accomodated in this small genus, third was added by Arnaud (1992). *Hemiprotaetia dubia* Wallace, 1868 and *Hemiprotaetia isarogensis* Moser, 1917 are flying in Luzon, *Hemiprotaetia boudanti* Arnaud, 1992 seems to be endemical to Panay Island.

The subgenus *Chalcoprotaetia* was also established by Mikšič (1963). Two historically known species have been attributed to this subgenus by author and one additional was described in the same work. As a type species author designated *Cetonia philippensis* Fabricius, 1775. Since that time no species have been described.

Recently several specimens of interesting Cetonia habitually resembling representatives of *Chalcoprotaetia* Mikšič, 1963 were collected in Sierra Madre Mountain Range in Luzon Island. Dissection of several males revealed that structure of aedeagus is in some characters closer to representatives of *Hemiprotaetia* Mikšič, 1963, mainly by extremely expanded

apical plate of aedeagus, which is same wide or just slightly wider than phalobase in *Chalcoprotaetia* Mikšič, 1963, but similarly developed in *Hemiprotaetia* Mikšič, 1963. One of main characters for separation between *Hemiprotaetia* Mikšič, 1963 and *Chalcoprotaetia* Mikšič, 1963 is the shape of mesometasternal process and structure of male aedeagi. Study of all six species in both groups reveals that all six species stay rather close to each other in some morphological characters and also share similar model of distribution. According to Mikšič (1963, 1973, 1982) mesometasternal process in *Hemiprotaetia* Mikšič, 1963 terminates with rounded apex, but it is flat in *Chalcoprotaetia* Mikšič, 1963. This is correct excepting some specimens of *Chalcoprotaetia philippensis* Fabricius, 1775. In this species mesometasternal process variates and in some specimens is the ending of mesometasternal process with nearly rounded apex. Other character for separation of both groups is basalic tomentum, which is developed in *Hemiprotaetia* Mikšič, 1963 species, but completely missing in *Chalcoprotaetia* Mikšič, 1963. But there are females of *Hemiprotaetia dubia* Wallace, 1868 completely without tomentum, not dissimilar with females of *Chalcoprotaetia* Mikšič, 1963. Aedeagi of males in both groups are also similar, differing in structure of apical plate and in ratio between width of apical plate and phalobase. Most constant aedeagal character between both groups seems to author that in *Chalcoprotaetia* Mikšič, 1963 apical plate of aedeagus grows straightly from the apex of phalobase, but not straightly in *Hemiprotaetia* Mikšič, 1963 (parallel in basal fifth and than widening into plate). Distribution of both groups is similar encompassing northern part of the Philippines, mainly Luzon Island. Due to all similarities mentioned above it is here proposed that genus *Hemiprotaetia* Mikšič, 1963 and subgenus *Chalcoprotaetia* Mikšič, 1963 can be threated as different ranks, but only as subgenera of *Protaetia* Burmeister, 1842.

MATERIAL AND METHODS

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

BMNH British Museum Natural History, London, England;
PAPC Patrick Arnaud private collection, Paris, France;
SJCP Stanislav Jákl private collection, Praha, Czech Republic;
SMTD Staatliches Museum für Tierkunde, Dresden, Germany;
ZMHB Museum für Naturkunde, Leibniz-Gemeinschaft, Berlin, Germany.

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. 2023. Label data are cited for the material examined, individual labels are indicated by a double slash (//), individual lines by a single slash (/).

RESULTS

Protaetia (*Hemiprotaetia*) Mikšič, 1963 stat. nov.

Protaetia (*Hemiprotaetia*) Mikšič, 1963a: 433 (original description), : 346 (subgenerical key).
Hemiprotaetia (Mikšič): Mikšič 1979: 233 (genus of Cetoniini), : 223 (generical key); Mikšič 1982: 161.

(monograph), : 15 (generical key); Krajčík 1998: 34 (catalogue); Sakai & Nagai 1998: 291 (iconography).
Type species *Cetonia dubia* Wallace, 1867 (designated by Mikšič 1963a: 434).

Protaetia (*Hemiprotaetia*) *boudanti* (Arnaud, 1992) stat. nov.
(Figs. 1-5)

Hemiprotaetia boudanti Arnaud, 1992: 29 (original description); Krajčík 1998: 34 (catalogue); Sakai & Nagai 1998: 291, pl. 96, figs. 1052-1 male (Panay), 1052-2 male (Panay), 1052-3 male (Panay), 1052-4 female (Panay), 1052-5 female (Panay), 1052-6 male (Negros), 1052-7 female (Negros) [iconography].

Type locality. "Philippines, Panay Isld., Antique" (= The Philippines, Panay Island, Antique Province).

Type material. Holotype ♂, paratypes 4 ♂♂, 3 ♀♀, (PLCP).

Additional examined material: 1 ♂ (SJCP) labelled: Mt. Malindog / Aklan Panay Is. / PHILIPPINES / 1994 FEB.; 4 ♂♂, 2 ♀♀ (SJCP) labelled: PHILIPPINES, PANAY I. / Illolo / I.2021 / local collector leg; 2 ♂♂ (SJCP) labelled: PHILIPPINES, Panay I. / Antique Prov. / Mt. Majaas, II. 2018 / local collector leg.

Distribution. The Philippines: Panay and Negros Islands.

Protaetia (*Hemiprotaetia*) *cupriventris* Moser, 1917 stat. nov.

Protaetia cupriventris Moser, 1917 : 9 (original description); Schenkling 1921 : 256 (catalogue); Mikšič 1963a : 431 (= *Protaetia dubia* Wallace); Mikšič 1982 : 166 (= *Protaetia dubia* Wallace); Arnaud 1992 : 32 (valid species); Krajčík 1998 : 34 (catalogue, = *Hemiprotaetia dubia* Wallace).

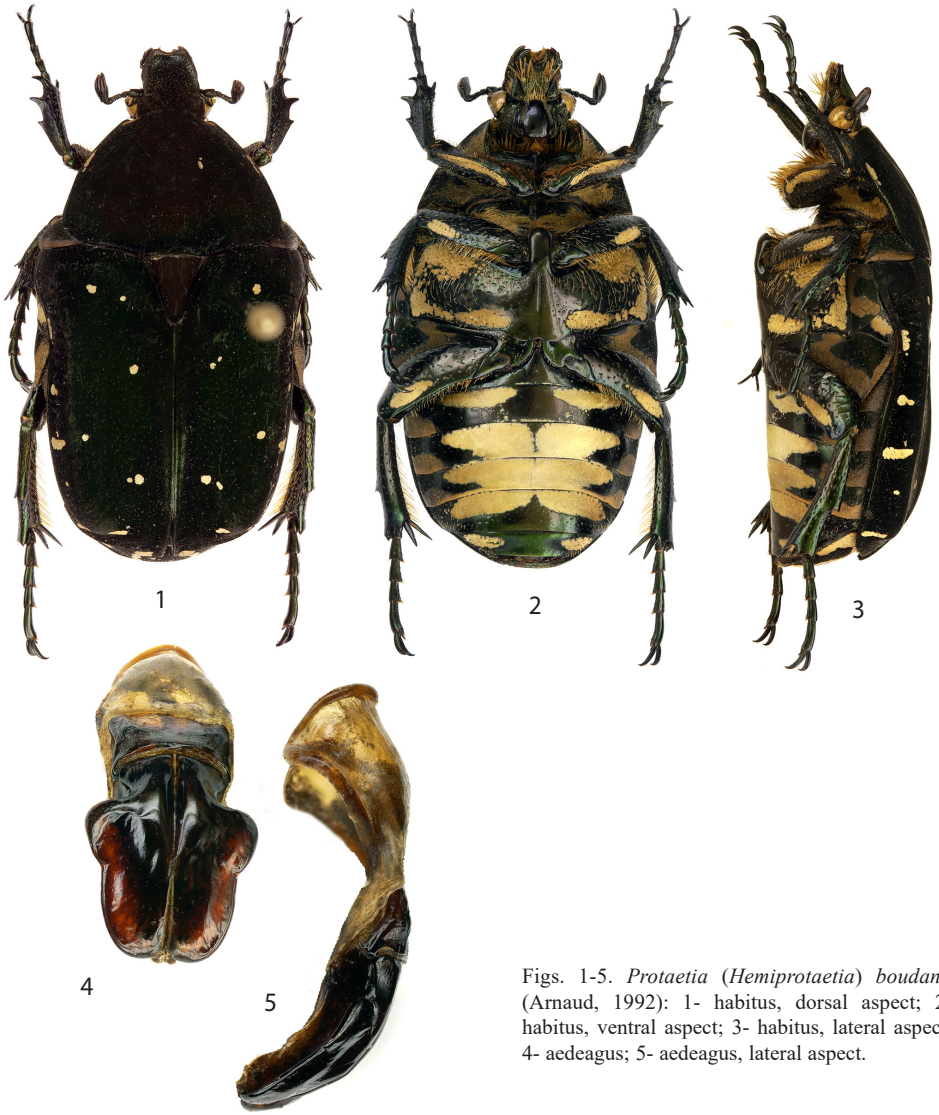
Type locality. "Luzon (Bayombong)" (= The Philippines, Luzon Island, Bayombong).

Type material. Holotype ♂, (ZMHB).

Additional examined material. None.

Distribution. The Philippines: Luzon Island.

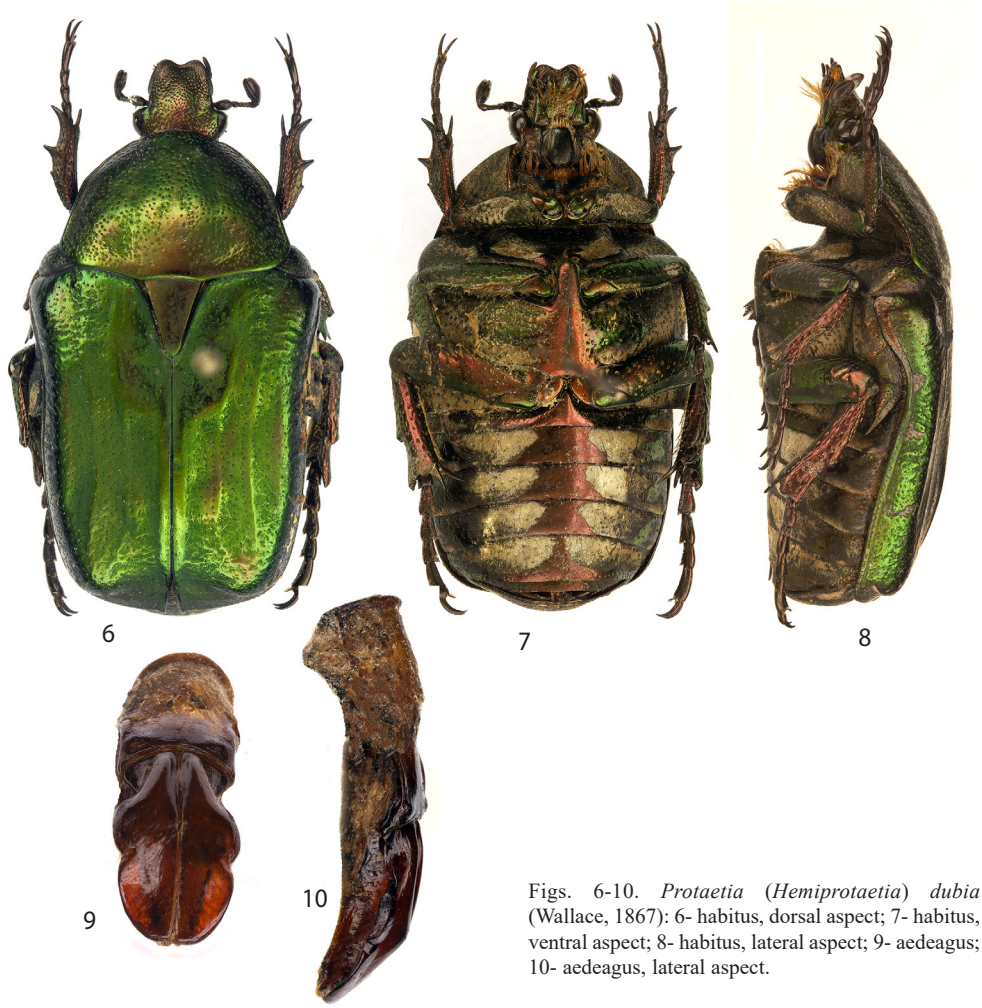
Note. In this species author follows the opinion of Arnaud (1992), who studied holotype male from ZMHB. The note of Arnaud (1992) is very short and due to this it was probably overlooked by Krajčík in his catalogue (1998), where the species stays in synonymy with *Hemiprotaetia dubia* Wallace. Author has specimens of *Hemiprotaetia* sp. from Luzon with completely different male aedeagi and this species might belong to *P. cupriventris* Moser, 1917 or possibly to other species synonymised with *P. dubia* Wallace by Mikšič (1963a) or another undesribed species.



Figs. 1-5. *Protaetia* (*Hemiprotaetia*) *boudanti* (Arnaud, 1992): 1- habitus, dorsal aspect; 2- habitus, ventral aspect; 3- habitus, lateral aspect; 4- aedeagus; 5- aedeagus, lateral aspect.

***Protaetia* (*Hemiprotaetia*) *dubia* (Wallace, 1867) stat. nov.**
(Figs. 6-10)

Cetonia dubia Wallace, 1867: XCVII (original description); Bourgoin 1929 : 270 (notes about *Cetonia dubia* Wallace)
Protaetia dubia (Wallace): Wallace 1868: 582 (description); Mohnike 1873: 192 (Cetoniidae of Philippine Islands); Schenkling 1921: 256 (catalogue).
Protaetia (*Hemiprotaetia*) *dubia* (Wallace): Mikšič 1963a: 435, fig. 31 (new subgenera of *Protaetia* Burmeister, aedeagus), : 434 (key for species); Mikšič 1963b: 431 (*Protaetia* of Philippines).



Figs. 6-10. *Protaetia* (*Hemiprotaetia*) *dubia* (Wallace, 1867): 6- habitus, dorsal aspect; 7- habitus, ventral aspect; 8- habitus, lateral aspect; 9- aedeagus; 10- aedeagus, lateral aspect.

Hemiprotaetia dubia (Wallace): Mikšič 1982: 165, fig. 25a (monograph, aedeagus), : 162 (key to species); Krajčík 1998: 34 (catalogue); Sakai & Nagai 1998: 291, pl. 96, figs. 1051-1 male (Luzon), 1051-2 male (Luzon), 1051-3 female (Luzon), 1051-4 female (Luzon) [iconography].
Protaetia flavomaculata Moser, 1914: 590 (original description); Schenkling 1921: 256 (catalogue); Mikšič 1963a: 431 (= *Protaetia dubia* Wallace). Type locality. Luzon (Bayombong). Type material. Holotype male in ZMHB.
Protaetia gregori Moser, 1906: 278 (original description); Schenkling 1921: 257 (catalogue); Mikšič 1963a: 431 (= *Protaetia dubia* Wallace). Type locality. Luzon (Mc. Gregor). Type material. Holotype female in ZMHB.
Protaetia monticola Moser, 1917: 10 (original description); Schenkling 1921: 259 (original description); Mikšič 1963a: 431 (= *Protaetia dubia* Wallace). Type locality. Luzon (Mt. Isarog). Type material. Syntypes in ZMHB.
Protaetia montivaga Moser, 1917: 8 (original description); Schenkling 1921: 259 (catalogue); Mikšič 1963a: 431 (= *Protaetia dubia* Wallace). Type locality. Luzon (Mt. Isarog). Type material. Holotype male in ZMHB.

Type locality. " Philippine Islands" (= The Philippines).

Type material. Type ♂, (BMNH).

Additional examined material: 2 ♂♂, 3 ♀♀ (SJCP) labelled: PHILIPPINES / N. LUZON Isl. / Mt. Province / 6. 1992 / native collectors; 1 ♂ (SJCP) labelled: Philippines / Luzon, Ladog / 6. 1984 Riva; 2 ♀♀ (SJCP) labelled: Philippines / Ifugao / 31.8.1995 / native collectors.

Distribution. The Philippines: Luzon.

Protaetia (*Hemiprotaetia*) *isarogensis* Moser, 1917 stat. nov.
(Figs. 11-15)

Protaetia isarogensis Moser, 1917: 7 (original description); Schenkling 1921: 258 (catalogue).
Protaetia (*Hemiprotaetia*) *isarogensis* Moser: Mikšič 1963a: 439, fig. 32 (new subgenera of *Protaetia* Burmeister, aedeagus); Mikšič 1963b: 433 (*Protaetia* of Philippines).
Hemiprotaetia isarogensis (Moser): Mikšič 1982: 165, fig. 25B (monograph, aedeagus), : 162 (key to species); Krajčík 1998: 34 (catalogue); Sakai & Nagai 1998: 291, pl. 96, figs. 1053-1 male (Luzon), 1053-2 male (Luzon), 1053-3 female (Catanduanes) [iconography].

Type locality. ''Luzon (Mt. Isarog)'' (= The Philippines, Luzon Island, Mt. Isarog).

Type material. Holotype ♂, (ZMHB).

Additional examined material: 3 ♂♂, 2 ♀♀ (SJCP) labelled: Philippines / South Luzon / Sorsogon, 6. 89 / native collectors.

Distribution. The Philippines: Luzon and Catanduanes Islands.

Protaetia (*Hemiprotaetia*) *madjaasica* sp. nov.
(Figs. 16-20)

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

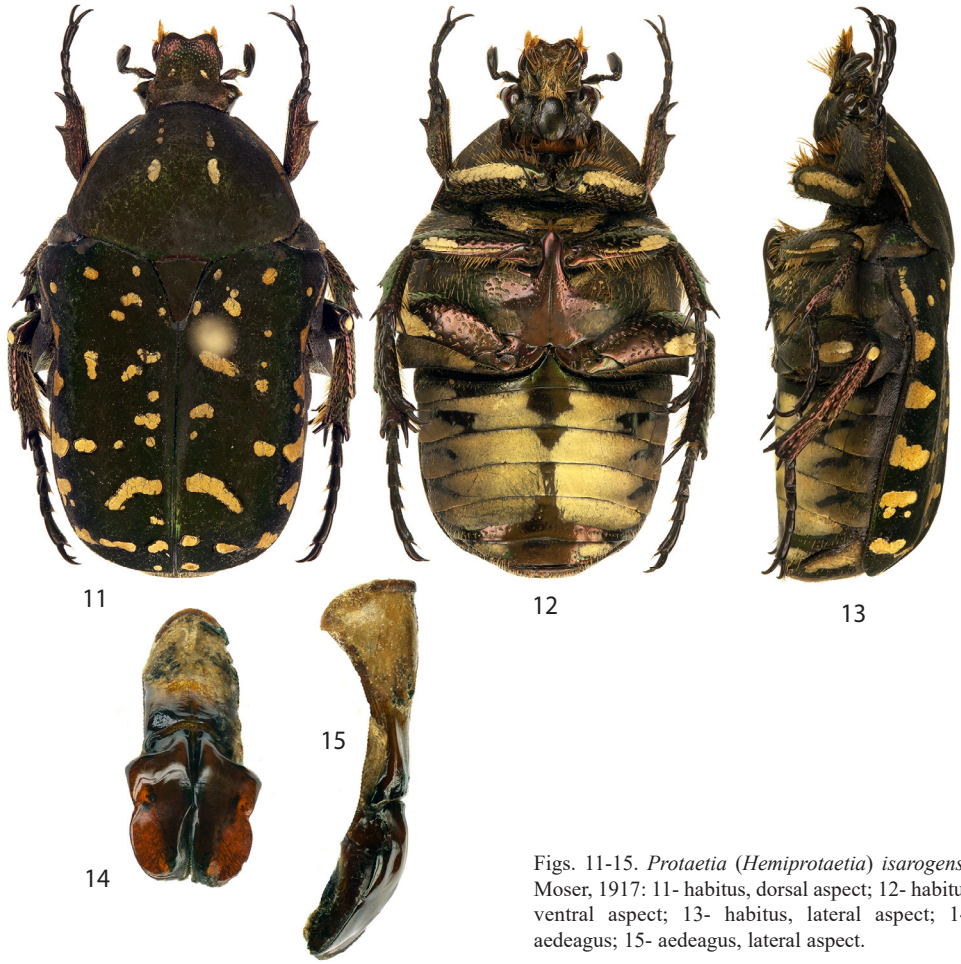
Type material. Holotype ♂ (SJCP) labelled: PHILIPPINES, Panay I./ Antique Prov./ MT. MAJAAS, II. 2018/ local collector leg. Paratype: (No. 1 ♀) (SJCP) labelled: same as holotype.

Description of holotype. Grassy green with considerably reduced dorsal ornament. Body length 20.00 mm, maximal width 10.5 mm.

Head. Green, apex with golden reflection, in frons opaque, with cover of dark green tomentum. Punctation rather dense in clypeus, sparser in frons. Diameters of punctures, simple, circularly shaped. Apex of clypeus nearly vertically elevated, bilobed. Widest shortly in front of eye canthus. Base of frons with rather long yellowish setation. Antennae black, excepting dark green, moderately shining scape. Antennal club shorter than stalk.

Pronotum. Grassy green with basalic tomentum. Three fourths of anterior margins with whitish vitta. Punctation rather uniformly distributed throughout total length, diameters of punctures much shorter than interspaces. Sides with very low and rather obtuse borders, not reaching posterolateral angles.

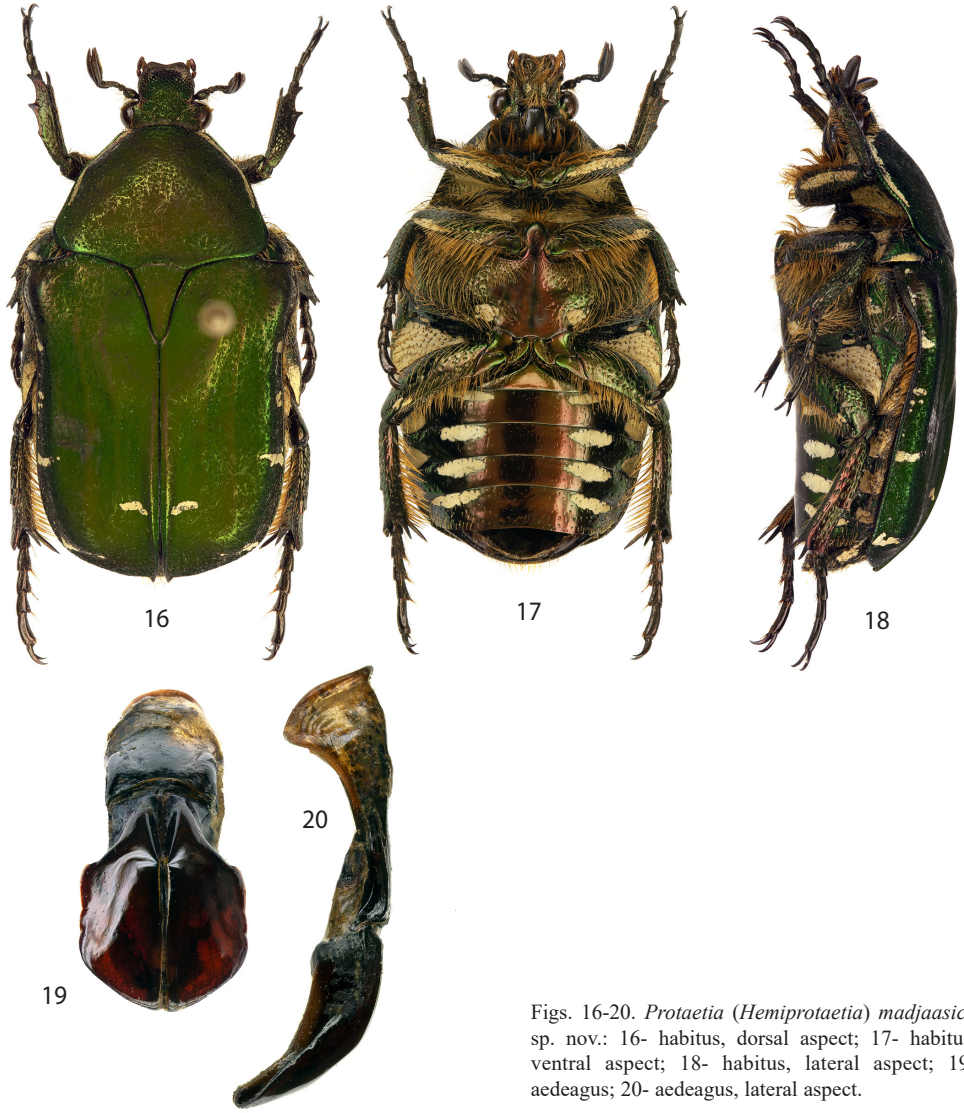
Scutellum. Green, opaque, immaculate, triangularly shaped with distinctly elongated apex.



Figs. 11-15. *Protaetia* (*Hemiprotaetia*) *isarogensis* Moser, 1917: 11- habitus, dorsal aspect; 12- habitus, ventral aspect; 13- habitus, lateral aspect; 14- aedeagus; 15- aedeagus, lateral aspect.

Elytra. Grassy green with cover of basalic tomentum. Anterior half with two groups of tiny white patches beside lateral margins. In posterior half each elytron with three transversally running white, short maculae, one placed in front of level of apical calli, second macula adjoining sutural ridge, two similarly sized and shaped short maculae placed, one beside lateral margin, second in apicolateral margin. Disc of elytron with indistinctly developed two obtuse ribs. Punctation simple and sparse, in basal third nearly impunctate. Sutural ridge elevated in two posterior thirds, its ending slightly drawn out over elytral apex.

Pygidium. Dark green with sparse and shallow transversally running wrinkles. Anterolateral margins with group of white patches, in apex with few tiny white maculae. Whole pygidial surface with cover of rather long yellowish setation.



Figs. 16-20. *Protaetia* (*Hemiprotaetia*) *madjaasica* sp. nov.: 16- habitus, dorsal aspect; 17- habitus, ventral aspect; 18- habitus, lateral aspect; 19- aedeagus; 20- aedeagus, lateral aspect.

Ventrum. Green, basalic tomentum absent. Abdomen and metasternal disc strongly shining. White ornament present in large part of abdominal sides, in most of metacoxae, smaller white patch of ornament placed in disc of metepisternum and beside posterior margin of metasternum. Large part of prosternum and mentum also with cover of whitish ornament. Punctation of abdomen very sparse and fine, metasternal sides and prosternum moderately striolated, disc of metasternal plate impunctate. Mesometasternal process short, its apex obtusely rounded. Metacoxae, metepisternum, sides of metasternum and prosterum with

long, yellowish setation.

Legs. Femora light green, shining, with cover of long setation. Tibiae dark green, tarsi dark green to black. Protibia tridentate. Meso- and metatibia with transversally developed carina in posterior half of length.

Genitalia. Male aedeagus with typically developed apical plate (Figs. 19-20).

Variability and sexual dimorphism. Length of second specimen available for study, female same as in male 20.0 mm. General appearance very similar to male but apical margin of clypeus only very slightly elevated, not bilobed, protibia also tridentate, but wider and more robust. Dorsal coloration very similar to male, but female with two additional small, white patches in basal elytral half placed between humeral calli and scutellum. White ornament in pygidium more expressed. Ventral ornament similar to male, more abundant in abdomen, especially in sides of abdominal disc. Ventral setation much shorter and sparser.

Differential diagnosis. Newly described species cohabits with *Protaetia* (*Hemiprotaetia*) *boudanti* Arnaud, 1992. It differs from its congener in following characters: I. Dorsal coloration grassy green, but dark green to brownish to nearly black in its congener; II. Lateral vittae in pronotum running through three anterior thirds in newly described species, but is completely absent or only fragmentally developed in its congener; III. Frons in newly described species with rather long yellowish setation in newly described species, but asetose in its congener; IV. Elytral ornament reduced to few transversally running white patches mainly in posterior, elytral half in newly described species, but with more abundant and differently composed usually rounded white patches in its congener; V. Ventrum (excepting abdomen) and femora with long and dense, yellow setation in newly described species, but much shorter and sparser setation in its congener; VI. Apical plate of male aedeagus not with notch, but with deep notch approximately in aedeagal middle length in its congener (Figs. 19-20).

Etymology. Named after Panay Island, type locality of newly described species.

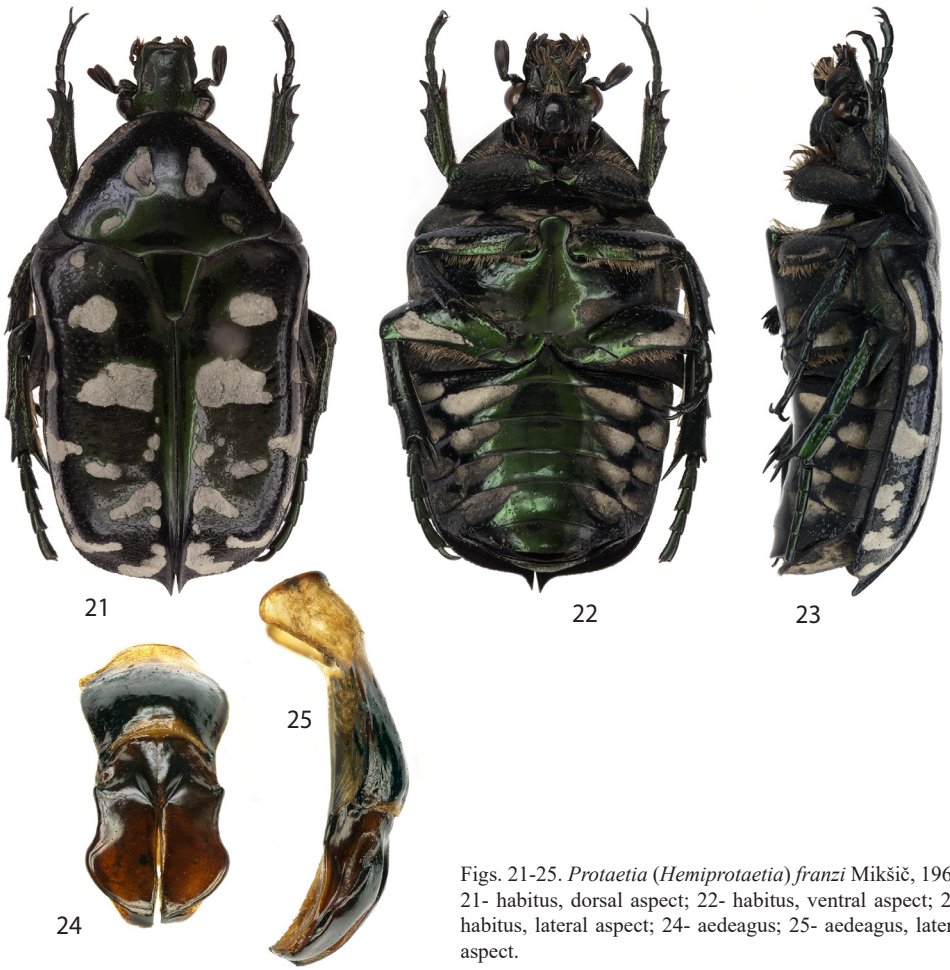
Distribution. The Philippines, Panay Island, Mount Madjaas.

Protaetia (*Chalcoprotaetia*) Mikšič, 1963

Protaetia (*Chalcoprotaetia*) Mikšič, 1963a: 428 (original description), : 346 (subgenerical key); Mikšič 1987: 153 (monograph), : 14 (subgenerical key); Krajčík 1998: 37 (catalogue), Sakai & Nagai 1998: 275 (iconography).
Type species *Cetonia philippensis* Fabricius, 1775 (designated by Mikšič, 1963a: 428).

Protaetia (*Chalcoprotaetia*) *franzi* Mikšič, 1963
(Figs. 21-25)

Protaetia (*Chalcoprotaetia*) *franzi* Mikšič, 1963a: 432 (original description), : 429 (key to species), : 434, fig. 30 (aedeagus), : 427, tab. 5, fig. 20 (habitus); Mikšič 1987: 158 (monograph), : 154, fig. 38 (aedeagus), : 154 (key to species); Krajčík 1998: 37 (catalogue), Sakai & Nagai 1998: 275, pl. 87, figs. 945-1 male (Romblon), 945-2 female (Romblon), 945-3 male (Bohol), 945-4 female (Panay) [iconography].



Figs. 21-25. *Protaetia* (*Hemiprotaetia*) *franzi* Mikšič, 1963: 21- habitus, dorsal aspect; 22- habitus, ventral aspect; 23- habitus, lateral aspect; 24- aedeagus; 25- aedeagus, lateral aspect.

Type locality. "Luzon" (= The Philippines, Luzon Island).

Type material. Holotype ♂, Allotype ♀, (SMTD).

Additional examined material: 1 ♂, 1 ♀ (SJCP) labelled: PHILIPPINES/ Romblon Isl./ Sibuyan 6. 1989/ native collectors.

Distribution. The Philippines: Luzon, Panay, Romblon, Sibuyan and Bohol Islands.

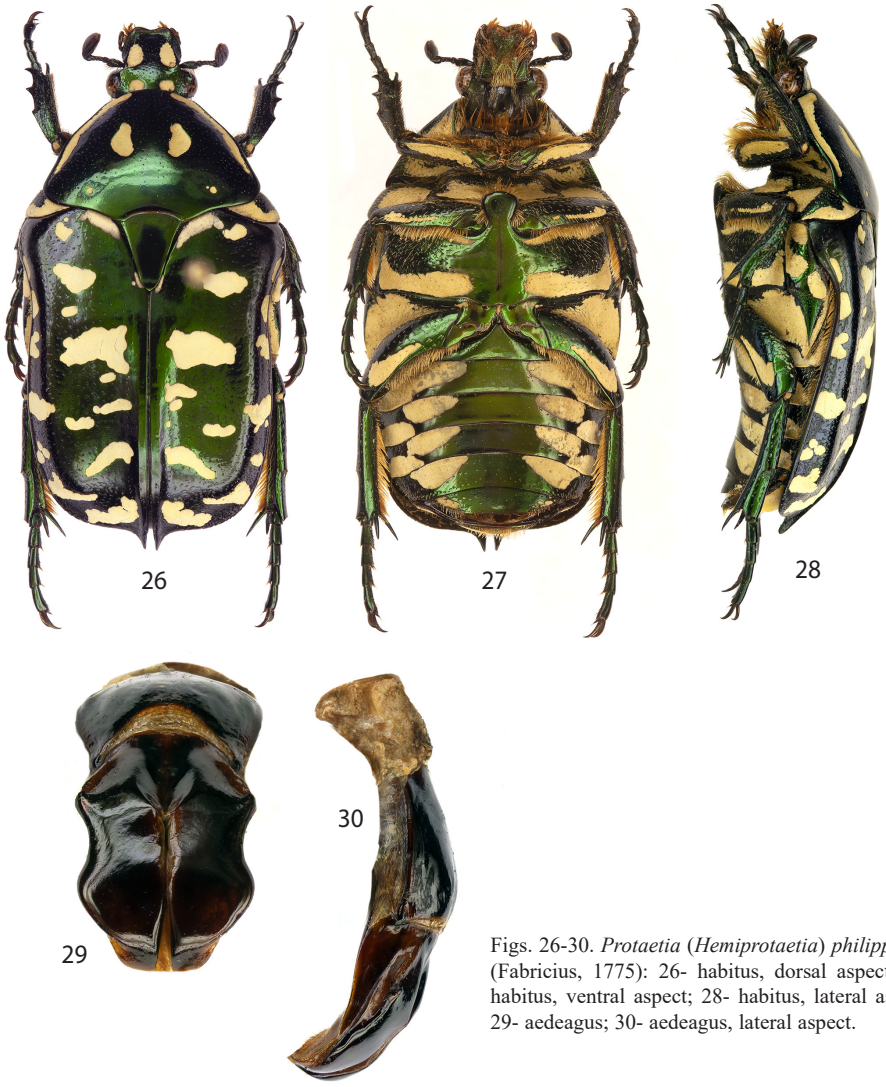
Protaetia (*Chalcoprotaetia*) *philippensis* (Fabricius, 1775)

(Figs. 26-30)

Cetonia philippensis Fabricius, 1775: 49, tab. 26, fig. 7 (original description); 1781: 58; 1787 : 30; 1792: 34, tab. 10, fig. 27; 1802: 153; Gmelin 1790: 1573; Herbst 1790: 275; Sturm 1803: 72, tab. 82, fig. 2; Schonher 1817: 136; Wallace 1868: 581; Mohnike 1873: 209.

Protaetia philippensis (Fabricius): Burmeister 1842 496; Schenkling 1921: 260 (catalogue).

Protaetia (*Chalcoprotaetia*) *philippensis* (Fabricius): Mikšič 1963a: 430 (*Protaetia* of Philippines), : 429 (key to species), : 434, fig. 29 (aedeagus), : 427, tab. 5, fig. 19 (habitus); Mikšič 1963b: 431 (*Protaetia* of Philippines); Mikšič 1987: 155 (monograph), : 154, fig. 37 (key to species, male aedeagus); Krajčík 1998: 37 (catalogue); Sakai & Nagai 1998: 275, pl. 87, figs. 944-1 male (Luzon), 944-2 male (Luzon), 944-3 male (Luzon), 944-4 female (Luzon) [iconography].



Figs. 26-30. *Protaetia* (*Hemiprotaetia*) *philippensis* (Fabricius, 1775): 26- habitus, dorsal aspect; 27- habitus, ventral aspect; 28- habitus, lateral aspect; 29- aedeagus; 30- aedeagus, lateral aspect.

Cetonia hieroglyphica Gory & Percheron, 1833: 175, tab. 31, fig. 1 (original description); Burmeister 1842: 496 (?= *P. philippensis* Fabricius); Wallace 1868: 581 (= *C. philippensis*). Type locality. Des Indes Orientales. Type material. Not traced.
Protaetia philippinensis Schoch, 1895: 115 (misspelling).
Cetonia philippensis var. *luzonica* Kraatz, 1890: 218 (original description).
Protaetia philippensis var. *luzonica* (Kraatz): Schenkling 1921: 260 (catalogue).

Type locality. "Habitat in insulis Philippinis" (= The Philippines).

Type material. Not located.

Additional examined material: 2 ♂♂, 1 ♀ (SJCP) labelled: Philippines, 6. 1989 / NEGROS OR. / Local collectors; 2 ♂♂ (SJCP) labelled: PHILIPPINES / Negros Isl. / 6. 1992 / native collectors; 1 ♂ (SJCP) labelled: PHILIPPINES / Romblon Isl. / Sibuyan, 6. 1989 / native collectors; 1 ♂ (SJCP) labelled: LUZON, LAGUNA Prov. / MT. BANAHAO, 1100m / 30. MAY 1996 / BOLM lgt.; 1 ♂, 1 ♀ (SJCP) labelled: Philippines / Marindugue Isl. / Tinggon Bay 300 m / Buenavista / native collectors; 7 ♂♂, 4 ♀♀ (SJCP) labelled: PHILIPPINES / SIBUYAN I. / V. 2012 / local collector leg.

Distribution. The Philippines: Luzon, Caballo and Panay Islands.

Protaetia (*Chalcoprotaetia*) *purpurissata* (Mohnike 1873)
(Figs. 31-33)

Cetonia purpurissata Mohnike, 1873: 211, tab. 6, fig. 1 (original description).
Protaetia purpurissata (Mohnike): Schenkling 1921: 261 (catalogue).
Protaetia (*Chalcoprotaetia*) *purpurissata* (Mohnike): Mikšič 1963a: 429 (*Protaetia* of Philippines), : 428 (key to species), : 434, fig. 28 (aedeagus); Mikšič 1987: 154 (monograph), : 154, fig. 36 (aedeagus), : 153 (key to species); Krajčík 1998: 37 (catalogue).

Type locality. "Habitat in insula Babuynes" (= The Philippines, Babuyan Archipelago).

Type material. Not located.

Additional examined material: 1 ♀ (SJCP) labelled: Camiguin Is. / Babuyan Isles / Philippines / X. 1998; 1 ♀ (SJCP) labelled: Calayan Is. / Cagayan Iss. / PHILIPPINES / MAR. 1999.

Distribution. The Philippines: Babuyan Archipelago.

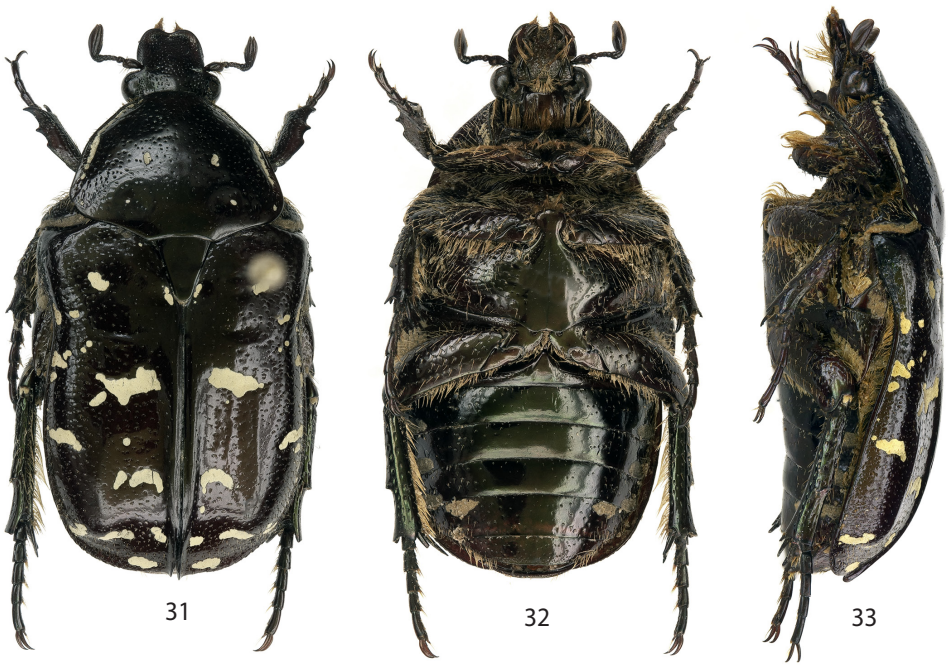
Protaetia (*Chalcoprotaetia*) *sierramadrensis* sp. nov.
(Figs. 34-38)

Type locality. The Philippines, North Luzon Island, Sierra Madre Mountains.

Type material. Holotype ♂ (SJCP) labelled: PHILIPPINES / N. LUZON / Sierra Madre / local collector leg; Paratypes: (Nos. 1-7 ♂♂, Nos. 8-11 ♀♀ (SJCP) labelled: same as holotype.

Description of holotype. Body size 18.5 mm (excluding pygidium). Coloration of dorsal side same as coloration of ventrum, black with dark green tinge, excepting scutellum, which is dark green. Both sides of body with cover of rich white ornament.

Head. Black, running in parallel. Punctation simple, moderately dense and rather deep,



Figs. 31-33. *Protaetia* (*Hemiprotaetia*) *purpurissata* (Mohnike 1873) female: 31- habitus, dorsal aspect; 32- habitus, ventral aspect; 33- habitus, lateral aspect.

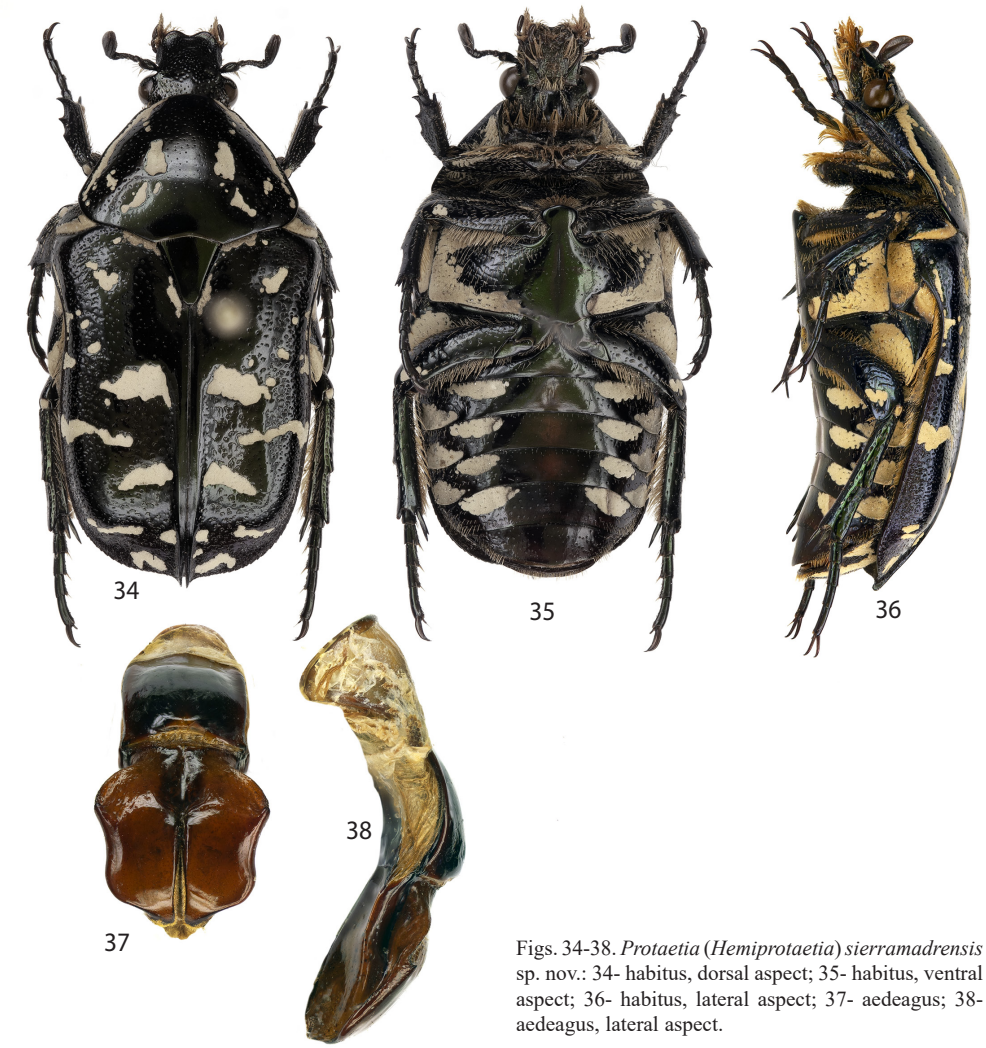
its density in frons and scutellum approximately same. Lateral declivities visible. Apex of clypeus moderately emarginated and slightly elevated. Setation and ornament absent. Antennae dark brown, stalk longer than antennal club.

Pronotum. Black, rather strongly reflected. White ornament covering nearly whole lateral margins and large part of pronotal, posterior half. Punctation simple and sparse in sides, very fine and sparser in disc. Pronotal base and lobe nearly impunctate. Sides with shallow border running throughout total pronotal length. Setation absent.

Scutellum. Dark green, strongly shining. Its shape triangular, impunctate and immaculate.

Elytra. Black, with very abundant cover of white ornament. Most of white maculae elongated, transversally developed. Margins of scutellum and inner halves of elytral base also decorated with white ornament. Apex and posterolateral margins with numerous, but shorter maculae. Subhumeral emargination obtuse. Punctation much more developed than in pronotum. Elytral sides with mixture of rugose punctures and short, dense striolae. Punctation of elytral disc sparser than in sides, but much more developed than punctation of pronotum. Elytral apex with dense and rugose striolation. Sutural ridge elevated in two posterior thirds, its termination sharp, its apex drawn out over apical margin of elytra. Humeral calli completely obtuse, calli in apex slightly developed.

Pygidium. Black, with dense and deep transversally developed striolation. White ornament rich, specially in sides.



Figs. 34-38. *Protaetia* (*Hemiprotaetia*) *sierramadrensis* sp. nov.: 34- habitus, dorsal aspect; 35- habitus, ventral aspect; 36- habitus, lateral aspect; 37- aedeagus; 38- aedeagus, lateral aspect.

Ventrum. Black, abdomen and metasternal disc shining. Abdomen with distinct impression. Large parts of abdominal, metasternal and prosternal sides, metepimeron and part of mesepimeron with cover of ochre ornament. Metasternal disc with two ochre maculae near posterior margin. Mesometasternal process glabrous, its apex circularly shaped. Punctation of abdomen sparse and fine, abdominal disc nearly impunctate. Metasternal sides with few short striolae lines, disc nearly impunctate. Parts of prosternum striolated.

Legs. Tarsi, tibiae and femora black, moderately long. Posterior margins of meso- and metafemora and inner margins of meso- and metatibia with brushes of yellowish setation. Outer margins of all femora with patch of ochre ornament. All femora with rather dense,

short striolae. Knees with patch of white ornament. Protibia bidentate, posterior tooth reduced. Mesotibia with obtuse, metatibia with more distinctly developed carina in posterior half.

Genitalia. Apical plate of aedeagus extremely expanded, its width much wider than width of phallobase (Figs. 37-38).

Variability. Size of males 17.5-20.5 mm (excluding pygidium). Part of males bicolored, with black head and pronotum and brownish elytra. Abundant white, dorsal ornament slightly different in every male. In other aspects similar or same.

Sexual dimorphism. Size of females 17.0-19.0 mm (excluding pygidium). Dorsal coloration similar as in males, one female dark green to black, three females with bicolored dorsum, black to dark green head and pronotum and brownish elytra. Protibia tridentate, abdomen without impression. Apex of sutural ridge shorter. Pattern of dorsal and ventral ornament similar to males. Also in other aspects same or similar to males.

Differential diagnosis. From *Chalcoprotaetia philippensis* Fabricius, 1775 and *Chalcoprotaetia franzi* Mikšič, 1963 new species differs in following: I. Lateral ridge merging gradually to lateral margins in new species, but more sharply developed in its congeners; II. White ornament of elytra and pronotum much more abundant, with more numerous patches in new species; III. Dorsal punctation dense and rugose, especially in elytral sides and apex, but with distinctly sparser and coarser punctation in its congeners; IV. Dorsal coloration in new species black or bicolored, with black head and pronotum and brownish elytra, but green (very seldom brownish) in historically described species; V. Aedeagus of male with extremely expanding apical plate, which is much wider than width of phallobase, but normally developed in its congeners.
From *Chalcoprotaetia purpurissata* Mohnike, 1873 newly described species differs in following: I. Mesometasternal process large, circularly shaped, slightly wider than long in newly described species, but much smaller, circular in its congener; II. Dorsal coloration black or bicolored, with black head and pronotum, and brownish elytra, but completely brownish to purpureously coloured in its congener; III. Dorsal punctation more rugose and denser in newly described species, especially in elytral sides and elytral apex; IV. Apical plate of male aedeagus in both species wider than width of phallobase, but in newly described species even more expanding to sides and its apical half running in parallel, but narrowing to its apex in historically described congener.

Etymology. Named after Sierra Madre Mountains, type locality of newly described species.

Distribution. The Philippines: North Luzon, Sierra Madre Mts.

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