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# Study on *Chalcopharis* Heller, 1901 of indonesian part of New Guinea Island (Coleoptera: Cetoniinae: Schizorhinini)

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**Taxonomy, new species, Coleoptera, Scarabaeidae, Cetoniinae, Schizorhinini, *Chalcopharis*, Indonesia, New Guinea Island, Papua Barat Province, Papua Tengah Province, Arfak Mountain.**

**Abstract.** A new species of *Chalcopharis* Heller, 1901 is described from Arfak Mountains in western part of Indonesian teritorry of New Guinea Island (Papua Barat Province). It is compared with *Chalcopharis hoyoisi* Rigout, 1997 originally described from Paniai District (Papua Tengah Province) from single male specimen. Males of both species are compared and differential diagnosis is given. *Chalcopharis hoyoisi* is redescribed and its female is described for the first time. Distribution of representatives of *Chalcopharis* is shortly discussed.

## INTRODUCTION

Genus *Chalcopharis* was established by Heller in 1902. *Schizorhina lansbergei* Gestro, 1876 was designated as a type species by the author. In the same work author described second species of the genus *Ch. nigroaenea* Heller, 1902. In 1909 Moser described large sized (38 mm) species *Ch. grandis* from Kani Mountains in Papua New Guinea, but this name was subsequently synonymized with *Ch. lansbergei* by Allard (1995). In the same work Allard (1995) described one new species from Morobe Province in Papua New Guinea, *Ch. coleopteresdumondei* Allard, 1995. Rigout (1997) added last species, *Ch. hoyoisi* occurring in Indonesian, western part of New Guinea Island. This is much smaller montane species and the holotype male was collected in Paniai lakes in Papua Tengah Province (Indonesia).

Large number of *Ch. hoyoisi* of both sexes, was collected in 2004-2006 in vicinity of Mapia village, place laying not far from the type locality, approximately at the same altitude (1500-1800 m). Due to brief description of single male of Rigout's species, redescription of male and description of female is given in taxonomical part of this article.

Rather surprising finding of even much smaller *Chalcopharis* was made in Arfak Mountains (Papua Barat Province) approximately in altitude 2000 m. Habitually this species looks like tiny *Ch. hoyoisi*. Study of two males revealed that the species differs in several morphological characters and it is new to science. This smallest and westernmost species will also be described in taxonomical part of this paper.

In most of collections *Chalcopharis* species are not present in large numbers. Distributional areal of the genus is small. Beside New Guinea Island species of *Chalcopharis,* also occur in New Britain and New Ireland (Papua New Guinea). There is a record of *Ch. lansbergei* from Japen Island (Indonesia). Author of this article did not examine any specimen of large sized species of the genus from the teritorry of Indonesian part of New Guinea Island,

althought *Ch. lansbergei* or something similar to it will probably also occur in western part of the island, especially in eastern parts (Papua Timur Province) near border with Papua New Guinea. Due to very limited records is the distribution of the genus still rather unknown, but up to now it seems that large sized species (26-38 mm) are distributed mainly in eastern lowlands and submontane forests of New Guinea Island, while small sized species (18-25 mm) might be restricted to highlands of western parts of the island.

## MATERIAL AND METHODS

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

PPSI Pusppenssat, Nabire, Papua Tengah Province, Indonesia;

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 and 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 slah (//), individual lines by a single slash (/).

## RESULTS

### *Chalcopharis hoyoisi* Rigout, 1997

(Figs. 1-8)

*Chalcopharis hoyoisi* Rigout, 1997: 25 (unfigured illustration of habitat and profile view of male aedeagus).

**Type locality.** Epomani, Paniai District, Irian Jaya (= Indonesia, Papua Tengah Province, Paniai District, Epomani).

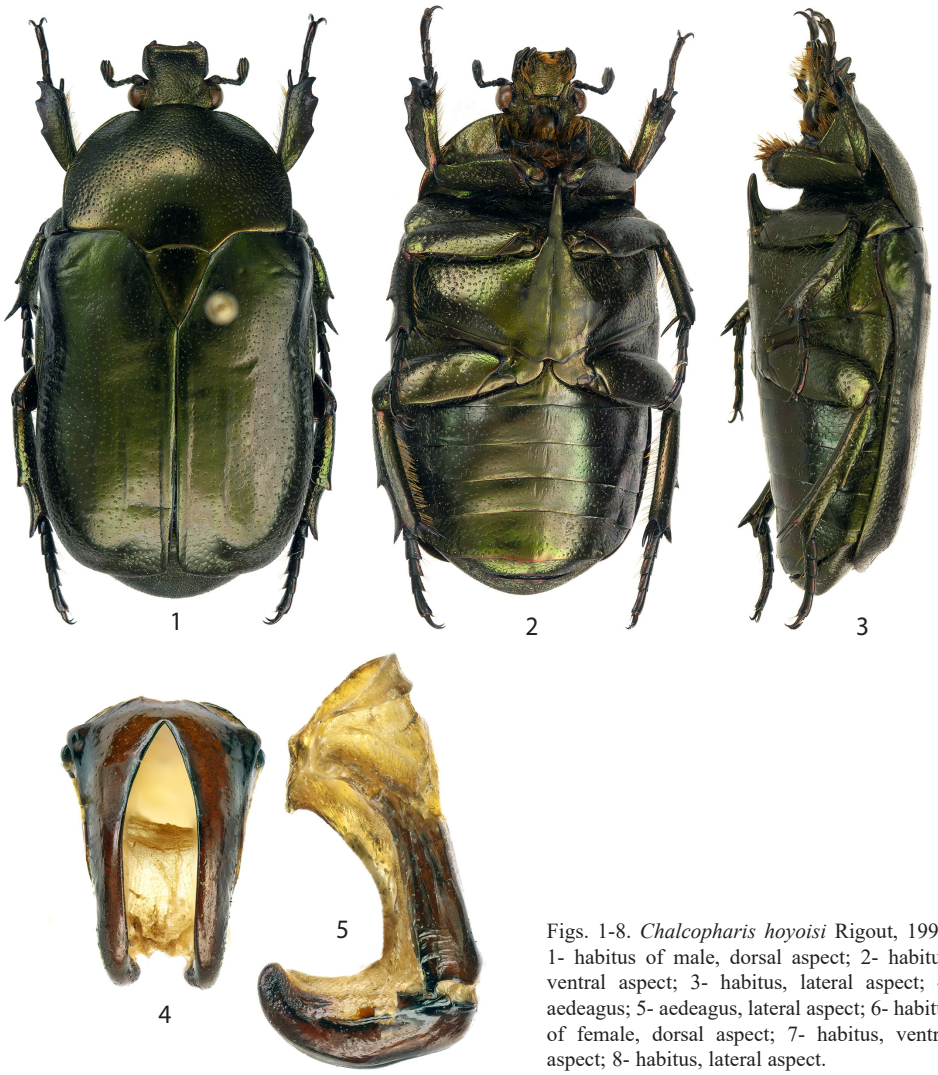
**Type material.** Holotype (♂) in PPSI. Type is deposited in Puspennsaat field research station in Papua and it is not accesible for study.

**Addittional material examined:** 3 ♂♂, 3 ♀♀ (SJCP) labelled: Indonesia, Irian Jaya centr. / Enarotali Distr., MAPIA env. / 12. 2004, local collectors lgt.; 7 ♂♂, 6 ♀♀ (SJCP) labelled: Indonesia, C. Irian Jaya / MAPIA env., 1500-1700 m / 11. 2006, local collectors.

**Redescription of the male.** Head, pronotum and elytra olive green with medially developed golden to violet reflection, especially in pronotum and scutellum. Some specimens bicolored, with darker olive elytra and lighter pronotum. Posterior half of pronotum and elytra running in parallel. Size 22.0-25.5 mm (excluding pygidium).

Head. Olive, slightly reflected. Punctation in clypeus fine and rather sparse, in frons denser with larger diameters of punctures. Sides of clypeus parallel, sharply narrowed shortly before eye canthus. Sides and apex of clypeus with high and sharp nearly vertically elevated border. Apical margin of clypeus shallowly emarginated. Scapus and second antennal segment dark brown, rest blackish. Stalk shortly setose and slightly longer than club.

Pronotum. Olive to dark olive green, usually with golden to violet lustre. Punctation simple, but rather large, especially in part of sides and anterior half. Near margins with




Figs. 1-8. *Chalcopharis hoyoisi* Rigout, 1997: 1- habitus of male, dorsal aspect; 2- habitus, ventral aspect; 3- habitus, lateral aspect; 4- aedeagus; 5- aedeagus, lateral aspect; 6- habitus of female, dorsal aspect; 7- habitus, ventral aspect; 8- habitus, lateral aspect.

mixture of large confluent punctures and short striolae. Basal lobe only with few simple punctures or impunctate. Anterior half of sides with distinctly developed border, which is nearly missing or obtuse in posterior half.

Scutellum. Triangularly shaped dark green, reflected. Beside dense micropunctation usually with fer simple punctures near scutellar base.

Elytra. Olive to dark olive, sides running in parallel. Simple and rather sparse punctation distributed throughout total length of disc. Lateral third of elytral sides and outer half of apex striolated. Each elytron with rather indistinctly developed, usually interrupted two obtuse ribs. In some specimens ribs completely missing. Subhumeral emargination very shallow.

6 7 8

Sutural ridge in anterior half obtuse, in posterior half slightly elevated. Lateral border of elytra developed only in two anterior thirds.

Pygidium. Olive green to purplish, with circularly developed striolation. Apex of pygidium obtuse.

Ventrum. Abdomen olive with violet tingue, arched. Sides with shorter striolae, disc nearly impunctate. Short and sparse, redish setation present only beside lateral sides. Metasternum dark green with golden reflection. Metasternal sides and anterior margins with horse shoe- shaped punctures and some shorter striolae. Reddish setation of metasternum rather short, metasternal disc more or less glabrous. Mesometasternal process long and narrow, its apex sharply ended. Base of mesometasternal process with constriction. Rather densely striolated prosternum green, reflected, its parts with cover of setae.

Legs. Short and stout. Femora and tibia dark green to olive, tarsi, knees, tibial spurs and tibial carinas purple to black. Protibia tridentate, posterior tooth more obtuse. Meso- and metatibia with sharply developed and rather long carina in posterior half.

Genitalia. Resembling other species of *Chalcopharis* (Figs. 4-5).

**Variability.** Variable in size (22.0-25.5 mm, excluding pygidium). Some specimens bi-colored, with darker elytra and lighter pronotum. In other aspects nearly same.

**Description of the female.** Sexual dimorphism in *Ch. hoyoisi* is very poorly developed. Main difference is in coloration of body: females usually completely black or at least very dark olive. Some females with black head, pronotum, scutelum and legs, but olive elytra. Average

size of females is slightly larger (23.0-26.0 mm, exluding pygidium). Punctation in females distinctly larger and deeper, especially in head, pronotum and abdomen. Protibia tridentate, its posterior teeth also rather distinctly developed. Elytral apex more obtusely rounded than in males. Legs very slightly more robust and shorter than in males. Terminal spurs of metatibia and carinas of mesotibia nearly same as in males. Also in other morphological characters used in redescription of male are both sexes identical or nearly identical.

**Differential diagnosis.** From all recently known representatives of the genus *Chalcopharis* this species can be distinguished in following aspects: I. body size much smaller (22.0-26.0 mm), but 26.0-36.0 in its congeners; II. Punctation of dorsum much more expressed, especially in elytra than in all congeners; III. Mesometasternal apex constricted, but gradually narrowing from base to apex in its congeners; IV. Meso- and metatibial carinae long and sharp, but short and much obtuser in its congeners; V. Different distributional areals and different altitudes should also be considered. *Chalcopharis hoyoisi* Rigout, 1997 seems to be montane species, while all its congeners occur in lower altitudes.

**Distribution.** Indonesia: Papua Tengah Province, Paniai District.

### *Chalcopharis georgei* sp. nov.
(Figs. 9-13)

**Type locality.** Indonesia, West Papua Province, Arfak Mountains, 2000 m alt., Manokwari region, Hing village env.

**Type material.** Holotype (♂) (SJCP) labelled: INDONESIA, West Papua Pr. / ARFAK MTS., 2000 m / Manokwari reg. / HING vill. env., XII. 2000 / local collector leg. Paratypes: (no. 1 ♂) (SJCP) labelled: same data as for holotype, (no. 2 ♂) (SJCP) labelled: same data as for holotype.

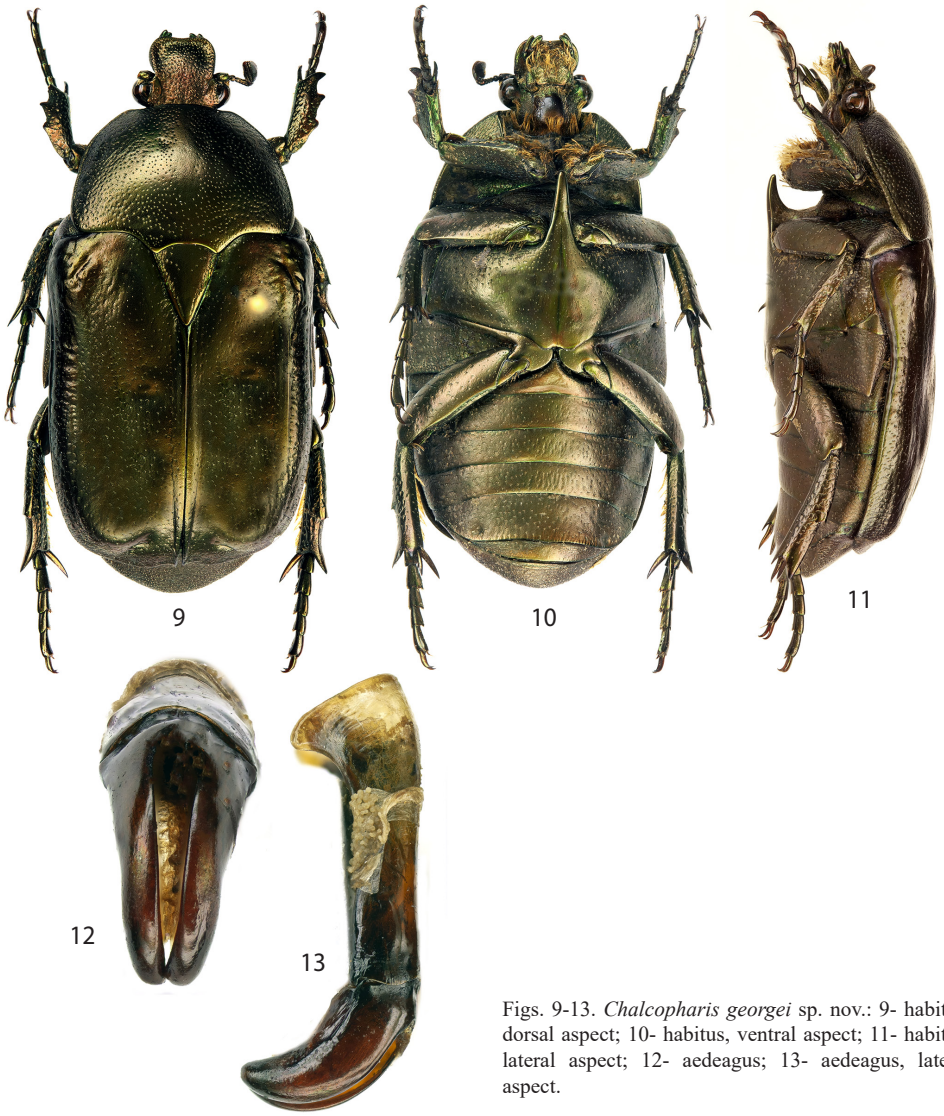
**Description of the holotype.** Size 19.0 mm (excluding pygidium). Coloration bronze to olive green, pronotum and elytra unicolored.

Head. Olive green, with mild purpureous lustre. From base widening approximately to 4/5 of apical length. Widest point shortly before apex. Punctation simple, rather dense, in clypeus slightly thinner. Lateral sides with shallow and obtuse border. Apex of clypeus mildly emarginated, with low and obtuse border. Scape green, rest of stalk black, club brownish with green tingue. Antennal club slightly shorter than stalk.

Pronotum. Coloration bronze to olive, moderately reflected. From posterolateral margins narrowing to apex, in anterior third more sharply. Sides with lateral border running nearly throughout total length. Broad sides and anterolateral margins with rather dense, mostly horse shoe- shaped punctation, punctation of pronotal disc and base more simple and sparser.

Scutellum. Tringularly shaped, apex sharply developed, coloration olive to bronze. Sides with several simple striolae lines, base of scutellum with few simple punctures.

Elytra. Bronze to olive, moderately shining. Very quadratical appearance, subhumeral emargination nearly absent, sides running paraller nearly throughout total elytral length. Whole elytra with punctation. Parts of disc and sides with mixture of short striolae lines and curved, longer striolae lines, inner part of disc with more simple and sparser punctation.




Figs. 9-13. *Chalcopharis georgei* sp. nov.: 9- habitus, dorsal aspect; 10- habitus, ventral aspect; 11- habitus, lateral aspect; 12- aedeagus; 13- aedeagus, lateral aspect.

Apex and posterolateral margins with much longer and denser striolation. Sutural ridge nearly flat, sparsely punctured. Posterior third of sutural ridge distinctly separated from disc by deep striola line, this line only fragmentally developed in two anterior thirds. Humeral and apical calli obtuse. Each elytron with rather short, but very deep impression between apical calli and elytral apex. Lateral border almost reaching level of calli in apex.

Pygidium. Coloration darker olive than in elytra. Dense and moderately deep striolation developed throughout total length. Setation missing.

Ventrum. Coloration olive with mild purpureous reflection. Abdomen with rather dense

punctation throughout total length, excepting glabrous first ventrite. Abdominal disc with more simple and sparser punctation, broad sides with horizontal short striolae lines. Anal ventrite wrinkled. Punctation in metasternum distinctly thinner than in abdomen. Metasternal disc only with few simple and fine punctures, metasternal sides with larger striolae lines or horse shoe- shaped puntures. Mesometasternal process slender, its base without constriction, gradually narrowing to apex, apex pointed, reaching level of procoxae. Mesepimeron and prosternum striolated. Mentum with ginger setation.

Legs. Femora, tibiae and tarsi dark green, tarsi slightly darker than the rest of legs. Protarsi tridentate, nearly equidistant. Meso- and metatibia with horisontally developed carina in posterior half of length. Tibial spurs rather sharp and long.

Genitalia. Aedeagus small, only partially sclerified. Similar to other representatives of genus, differentiating mainly in profile view (Figs. 12-13).

**Variability and sexual dimorphism.** Other two males male available for study slightly smaller (18.5 mm, excluding pygidium). In all other characters similar or same as holotype male. Female of this newly described species stays unknown.

**Differential diagnosis.** Newly described species is the smallest representative of the genus and its distribution is westernmost. It has only one species, which can be confused with, *Ch. hoyoisi*. It can be easily distinguished in following characters: I. Size of new species 18.5-19.0 mm, but distinctly larger 22.0-26.00 mm in *Ch. hoyoisi*; II. Clypeus from base widening to its apex, sides of clypeus and apical margin of clypeus very obtuse and low; but with paraller sides of clypeus and steep, nearly vertically elevated borders in sides and apex of clypeus; III. Elytra and pronotum unicolored, but usually bicolored in its congener; IV. Scutellum with striolated sides, but glabrous sides in its congener; V. Posterior third of sutural ridge separated from elytral disc with deep striolae line, which is missing or only fragmentally developed in its congener; VI. Elytron between apical calli and elytral apex with deep impression, which is missing in its congener; VII. Mesometasternal process without constriction near its base, but with constriction in its congener; VIII. Meso- and metatibia with simple carina in its posterior half, but with elongated and sharply developed carina in *Ch. hoyoisi*.

**Etymology.** Named after my friend George Mambo Octavianus (Kalibaru, East Java, Indonesia), who organised several expeditions to Arfak Mountains in western part of New Guinea Island.

**Distribution.** Indonesia, West Papua Province, Arfak Mountains.

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