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A new subgenus and new species in tribe Phaedimini from southern Vietnam (Coleoptera: Scarabaeidae: Cetoniinae)

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Abstract. A new subgenus and new species of *Philistina* MacLeay, 1838 are described and named as *Philistina* (*Binhthuana*) subgen. nov and *Philistina* (*Binhthuana*) *confusa* sp. nov. The newly established subgenus is accomodated in the system of an exclusively Oriental tribe Phaedimini. It is compared with other subgenera of *Philistina* MacLeay. A taxonomic key to all subgenera of *Philistina* MacLeay is given.

INTRODUCTION

The history of the tribe Phaedimini dates back to 1894, when Schoch (1894) established the section Phaedimi and placed it into the subtribe Goliathinina. Schenkling (1921) listed all genera in Goliathini. The knowledge was improved by Mikšič (1971), who provided the first diagnosis of the tribe and placed *Rhinacosmus* Kraatz, 1895, *Mycteristes* Castelnau, 1840, *Prigenia* Mohnike, 1871, *Phaedimus* Waterhouse, 1841, *Hemiphaedimus* Mikšič, 1972 (in press at that time), *Theodosia* Thomson, 1880 and *Dicronocephalus* Burmeister, 1842 in Phaedimini. Later Mikšič (1977) reassigned *Rhinacosmus* and *Prigenia* to subgenera of *Mycteristes*. *Dicronocephalus* was later moved into Goliathini by Krikken (1984) in his suprageneric study, recognising five valid genera belonging to Phaedimini, i.e. *Phaedimus* (including *Hemiphaedimus*), *Philistina* (= *Mycteristes*), *Prigenia*, *Rhinacosmus* and *Theodosia*. Sakai & Nagai (1998) recognised only four valid genera: *Theodosia*, *Phaedimus*, *Hemiphaedimus* and *Mycteristes*. Krajčík (1998) studied *Philistina* and recognised just two other genera, *Phaedimus* and *Theodosia*. Authors after Krajčík's catalogue (1998) mostly follow this concept. Jákl (2016) added a new subgenus of *Philistina* known only from one male from Arunachal Pradesh in India.

This article currently follows the opinion of Krajčík (1998) although it is possible molecular analyses will change dramatically the recent concept in higher taxonomy in this small, but very interesting tribe of Cetoniidae, especially thetreatment of subgenera of *Philistina* MacLeay, 1838. This genus currently accomodates eight different subgenera: the nominotypical subgenus with a single species endemic to Java and Bali Islands (Indonesia); *Cephalocosmus* Kraatz, 1895 with eight species distributed in the transitional zone between the Palearctic and Oriental regions; *Demba* Jákl, 2016 with a single species known only from the Arunachal Pradesh State in NE India; *Euprigenia* Mikšič, 1974 with three species

endemic to Borneo/Kalimantan Island (Malaysia and Indonesia); *Hemicephalocosmus* Mikšič, 1974 with a single species from the south of India; *Hemiprigenia* Mikšič, 1974 with three species more or less mimicing the distribution of *Cephalocosmus*, *Prigenia* Mohnike, 1871 with two species known from Sumatra and Java Islands (Indonesia) and *Rhinacosmus* Kraatz, 1895 with three species occurring in Mindanao, Cebu and Basilan Islands (the Philippines), one species in Borneo/Kalimantan (Malaysia and Indonesia) and one species from the western part of Java (Indonesia).

A very strange species belonging to *Philistina* MacLeay was recently collected in Binh Thuán Province in the southern tip of Vietnam. The species shares some of characters with *Cephalocosmus* Kraatz and some with representatives of *Rhinacosmus* Kraatz. Also the locality lays approximately between areas of distribution of both mentioned subgenera. In the shape of the body, size and general habitus it is not dissimilar to *Cephalocosmus tonkinensis* Moser, 1903, but the structure of the head is closer to representatives of *Rhinacosmus* Kraatz. Male genitalia are closer to *Rhinacosmus* species. Because this species can‘t be currently attributed to any of known subgenera, the species is accomodated in the newly established subgenus and is described in taxonomic part of this article.

MATERIAL AND METHODS

The following codens of collections are used in text:
BMNH British Museum Natural History, London, England;
RMNH Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands;
SJCP Stanislav Jákl private collection, Praha, Czech Republic.

Each specimen of the newly described subgenus and species are provided with red label for HOLOTYPUS and yellow label for PARATYPUS, sex symbol and St. Jákl det. 2025. Exact label data are cited for the material examined, individual labels are indicated by a double slash (//), individual lines by a single slash (/).

Following numbers of all species of *Cephalocosmus* Kraatz, 1895 and *Rhinacosmus* Kraatz, 1895 have been compared with newly described subgenus and species:
Philistina (*Cephalocosmus*) *benesi* (Drumont, 1998) - 10 ♂♂, 8 ♀♀: (SJCP);
Philistina (*Cephalocosmus*) *campagnei* (Bourgoin, 1920) - 9 ♂♂, 7 ♀♀: (SJCP);
Philistina (*Cephalocosmus*) *gestroi* (Arrow, 1910) - 5 ♂♂, 10 ♀♀: (SJCP);
Philistina (*Cephalocosmus*) *microphyllus* (Wood-Mason, 1881) - 3 ♂♂, 3 ♀♀: (SJCP);
Philistina (*Cephalocosmus*) *salvazai* (Bourgoin, 1920) - 6 ♂♂, 4 ♀♀: (SJCP): (SJCP);
Philistina (*Cephalocosmus*) *tonkinensis* (Moser, 1903) - 20 ♂♂, 14 ♀♀: (SJCP);
Philistina (*Cephalocosmus*) *yunnana* (Krajčík, 2012) - 1 ♂: (holotype, BMNH);
Philistina (*Rhinacosmus*) *inermis* (Janson, 1903) - 4 ♂♂, 3 ♀♀: (SJCP);
Philistina (*Rhinacosmus*) *fujiokai* (Jákl, 2011) - 1 ♂: (holotype, SJCP);
Philistina (*Rhinacosmus*) *javanus* (Krikken, 1979) - 1 ♂: (holotype, RMNH);
Philistina (*Rhinacosmus*) *pilosus* (Mohnike, 1873) - 5 ♂♂, 3 ♀♀: (SJCP);
Philistina (*Rhinacosmus*) *zebuanus* (Kraatz, 1895) - 18 ♂♂, 11 ♀♀: (SJCP).

RESULTS

Philistina MacLeay, 1838

Binhthuana subgen. nov.

Type species: *Philistina* (*Binhthuana*) *confusa* sp. nov.

Description. (♂). Body size 15.0-16.0 mm (excluding pygidium). Chestnut brown with medially developed purpureous reflection.

Head. Dark brownish, with purpureous to metallic reflection. Setose throughout total length, setation of clypeus, specially its apex shorter. Frons and clypeus with short, dense wrinkles and some irregularly shaped punctures. Clypeus distinctly longer than frons. Apex of clypeus nearly vertically elevated, apical margin straight. Sides of clypeus sharply elevated and approximately running in parallel, not reaching clypeal apex. Antennae brownish, club longer than stalk.

Pronotum. Dark brownish, parts setose, especially in sides. Punctation finer than on head, most diameters smaller than interspaces. From pronotal disc to pronotal lobe with impression. Sides with low and obtuse border.

Scutellum. Triangularly shaped, basal margin and two posterior thirds of sides with short striolae and few setae, remainder impunctate.

Elytra. Coloration dark brownish, setose. Punctured and striolated throughout total length, excepting glabrous elytral ribs. Elytral disc with impression and abundant longitudinally running striolation. Lateral ridge and elytral basal quarter with mixture of punctation and striolation. Humeral calli with sharply developed carina. Subhumeral emargination not developed. Apex of elytron obtusely rounded.

Pygidium. Brownish, reflected. Short, dense, rather shallow, horisontally running striolae running uniformly throughout total length.

Ventrum. Brownish with rather strong metallic reflection and moderately developed setation. Abdomen with impression in segments 2nd-4th. Abdominal sides striolated, its disc with small, but rather dense horse- shoe shaped punctures. Metasternum strongly reflected. Metasternal sides with rather dense striolation, disc more or less punctured. Mesometasternal process small and short, from base narrowing to its apex, in apex rounded. Prosternum and mentum purpureously shining, uniformly striolated and covered with yellowish setae.

Legs. Femora and tibiae brownish, tarsi black, all femora and tibiae with purpureous/ metallic reflection. All tarsi elongated, longer than tibiae. Protibia tridentate. Meso- and metatibiae with indistinctly developed carina in posterior half.

Differential diagnosis. The newly described subgenus belongs between *Cephalocosmus* Kraatz, 1895 and *Rhinacosmus* Kraatz, 1895. It differs from them by the differently structured head, with highly and vertically elevated apical margin of clypeus and highly elevated sides of head, running nearly throughout total length. In subgenus *Rhinacosmus* the head is completely simply developed, without any horns or declivities. In the subgenus *Cephalocosmus* the head has a T- shaped cephalic horn and usually tiny lateral horns. The

general habitus of the newly described species and subgenus is at first sight similar to *Cephalocosmus tonkinensis* Moser, 1903, but can be separated by the structure of the male parameres being closer to representatives of the subgenus *Rhinacosmus* Kraatz.

Etymology. Derived from Binh Thuán Province laying in the southern tip of Vietnam; feminine gender.

Distribution. South Vietnam: Binh Thuán Province.

Key to *Philistina* subgenera (♂♂):

1 (2) Head and pronotum both with armature ..... *Philistina* (*Philistina*)
2 (1) Pronotum always unarmed.
3 (4) Apical margin of clypeus straight, not elevated. Head unarmed. Lateral sides of head without horn or declivity ..... *Philistina* (*Rhinacosmus*)
4 (3) Apical margin of clypeus elevated or not. Head with or without horns. Lateral sides of clypeus with horn or declivity.
5 (14) Medium sized species, body size 16-25 mm. Species from continental Asia (excluding Malay peninsula).
6 (7) Apical margin of clypeus unarmed, lateral sides of head with horn heading forward. Ribs of elytra not developed or very vague ..... *Philistina* (*Hemiprigenia*)
7 (6) Apical margin of clypeus sharply, vertically elevated or with horn.
8 (11) Elytral ribs running in parallel, not curved. Elytral impression not developed.
9 (10) Part of head, elytral apex and pygidium without setation. Lateral horns of head very low and rounded. Frontoclypeal horn short, robust, bilobed ..... *Philistina* (*Hemicephalocosmus*)
10 (9) Head very short, with dense setation covering entire dorsal surface (except clypeus). Lateral horns of head moderately long, their base with constriction. Frontoclypeal horn very long, heading upwards, its termination sharp ..... *Philistina* (*Demba*)
11 (8) Posterolateral two thirds of elytral disc with impression, elytral ribs curved.
12 (13) Apex of clypeus with T-shaped horn. Disc of head usually with short horn heading forward. Sides of clypeus with additional horn heading approximately upward. Protarsi longer than protibiae .... *Philistina* (*Cephalocosmus*)
13 (12) Apex of clypeus without T-shaped horn, sharply, vertically elevated. Disc of head without horn. Sides of clypeus without horn, with only obtuse declivity. Protarsi same length as protibiae *Philistina* (*Binhthuana*)
14 (5) Large species from Indonesia and Malaysia, body size 25-30 mm.
15 (16) Species from Borneo with frontoclypeal horn and T-shaped horn on frons..... *Philistina* (*Euprigenia*)
16 (15) Species from Indonesia (Java, Sumatra) and Malay Peninsula (Malaysia). T-shaped horn on frons not developed, apical margin of clypeus unarmed..... *Philistina* (*Prigenia*)

Philistina (*Binhthuana*) *confusa* sp. nov.

(Figs. 1-5)

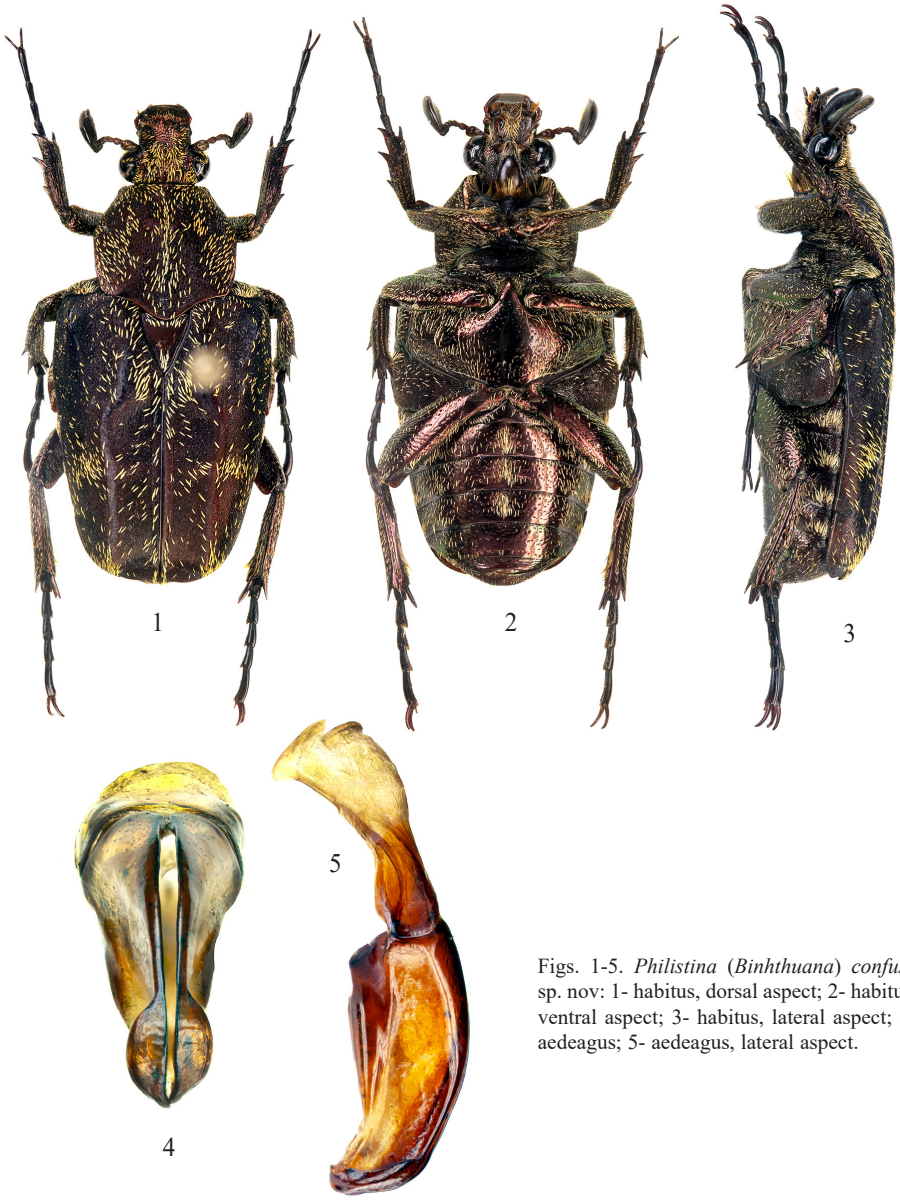
Type locality. South Vietnam, Binh Thuán Province.

Type material. Holotype (♂) (SJCP) labelled: S. VIETNAM/ Binh Thuán Province, VI. 2024, local collector leg. Paratype (No. 1 ♂) (SJCP) labelled: same as holotype.

Description of holotype. Dark brownish, with cover of whitish to yellowish scales and mild metallic to purpureous lustre in all parts of dorsum. Body size 15.5 mm (excluding pygidium).

Head. Bownish, with rather dense cover of whitish scales. Metallic to purpureous lustre present throughout total length, stronger on clypeus. Punctation simple and rather dense,

most of punctures with diameters larger than interspaces. Clypeus longer than frons. Disc of clypeus unarmed as in subgenus *Rhinacosmus* Kraatz. Apex of clypeus vertically elevated, parallel sided. Two posterior thirds of sides obtusely elevated, but typical horns known in all representatives of *Cephalocosmus* Kraatz not developed. Antennal pedicel dark brown, club nearly black, segments with approximately same length.



Figs. 1-5. *Philistina* (*Binhthuana*) *confusa* sp. nov: 1- habitus, dorsal aspect; 2- habitus, ventral aspect; 3- habitus, lateral aspect; 4- aedeagus; 5- aedeagus, lateral aspect.

Pronotum. Dark brownish with mild purpureous lustre and moderately dense cover of white to yellowish scales. Pronotal sides finely wrinkled, pronotal disc with simple punctation, diameters of punctures approximately same as interspaces or smaller in some parts, especially on pronotal disc. Pronotal sides with low and narrow, but distinct border,

Scutellum. Velvety brownish, moderately reflected. Disc impunctate, base and apex with few short striolate lines and covered with yellowish scales.

Elytra. Coloration same as on head and pronotum, dark brownish. Mild purpureous lustre present in elytral ribs and in subscutellar part of elytra. Posterior two thirds of elytral disc with impression. Entire elytral disc and large part of sides with longitudinally running striolation, basal third of elytral sides with very fine and rather sparse punctation. Humeral calli sharply developed, carinate. Calli obtuse at apex. Subhumeral emargination absent. Sutural ridge flat throughout total length. Apex of each elytron broadly rounded. Cover of whitish to yellowish scales slightly sparser than on pronotum.

Pygidium. Brownish, mildly reflecting, horizontally developed fine striolation running uniformly throughout total length. Instead of scales, with very fine and sparse, short yellowish, setae.

Ventrum. All parts of ventral side purpureous with strong metallic lustre. Broad sides of abdomen and metasternum, anal ventrite, mes- and metepimeron and large part of prosternum and mentum striolated. Abdominal and metasternal disc with moderately dense, but simple punctation. Lateral parts of ventrum with moderately dense cover of white scales. Metasternal plate with impression and central, glabrous line. Mesometasternal process small and short, from base narrowing gradually to rounded apex.

Legs. Femora and tibiae coppery metallic, tarsi black. Length of tibiae and tarsi approximately equal. Claws of protarsi distinctly shorter than apical tarsal segment. Protibia tridentate, teeth equidistant. Mesotibia with small, but distinct carina, carina on metatibia vague.

Genitalia. Resembling parameres of representatives in subgenus *Rhinacosmus* Kraatz, 1895 (Figs. 4-5).

Variability. Second male available for study identical with holotype, its size 15.7 mm.

Differential diagnosis. The combination of the following characters differentiates the newly described species from all representatives of its congeners accomodated in *Cephalocosmus* Kraatz, 1895 and *Rhinacosmus* Kraatz, 1895: I. Apical margin of clypeus vertically elevated, parallel sided; II. Frontoclypeal horn absent; III. Lateral sides of clypeus with obtuse elevated declivity running on two posterior thirds; IV. Lateral horns not developed; V. Disc of head unarmed; VI. Elytra with large impression; VII. Elytral ribs curved; VIII. Both body sides with cover of white to yellowish scales, setation not developed; IX. Length of tarsi and tibiae approximately equal.

Etymology. The name of the newly described species refers to confusing morphological characters, partially belonging to representatives in the subgenus *Cephalocosmus* Kraatz, 1895 and partially to representatives in the subgenus *Rhinacosmus* Kraatz, 1895.

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REFERENCES

Burmeister H. 1842: *Handbuch der Entomologie. Dritter Band. Coleoptera Lamellicornia Melitophila.* Berlin: T. E. F. Enslin, xx + 826 + 1 pp.

Krajčík M. 1998: *Cetoniidae of the world, Catalogue-Part I. Zlatohlávkovití světa, Katalog-Část I.* Krajčík (published privately by the author). Most, 96 + 36 pp.

Krikken J. 1984: A new key to suprageneric taxa in the beetle family Cetoniidae, with annotated lists of the known genera. *Zoologische Verhandelingen* 210: 3-75.

Mikšič R. 1971: Einige Bemerkungen uber die systematische Stellung und Einteilung der asiatischen Goliathina. *Acta Entomologica Jugoslavica* 7(2): 37-47.

Mikšič R. 1974: Ein beitrag zur kenntnis der gattung *Mycteristes* Cast. *Bulletin Scientifique Jugoslavie Sect. A* 19(7-8): 187-189.

Mikšič R. 1977: *Monographie der Cetoniinae der palearctischen und orientalischen Region. Coleoptera: Lamellicornia. Band 2. Systematischer Teil: Gymnetini (Lomapterina, Clinteriina), Phaedimini, Gnathocerini, Heterorrhinini.* Sarajevo: Forstinstitut in Sarajevo, 400 pp., 15 pls.

Sakai K. & Nagai S. 1998: The Cetoniinae beetles of the World. Pp. 1-6 + 7-150 unpag. [pls. 1-144] + 151-421 + 3 unpag. In: Fujita H. (ed.): *Mushi-Sha's iconographic series of insects 3.* Tokyo: Mushi-Sha, 2 unpag. + 342 + 5 unpag. (iin Japanese and English).

Schenkling S. 1921: Scarabaeidae: Cetoniinae: In: Junk W. & Schenkling S. (eds.): *Coleopterum Catalogus Pars 72.* Berlin: W. Junk, 431 pp.

Schoch G. 1894: Ueber die Systematik der Cetoniden. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 9(4): 164-225.

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