

***Philistina* (*Demba* subgen. nov.) *arunachalensis* sp. nov.  
of the genus *Philistina* MacLeay, 1838  
in tribe Phaedimini (Coleoptera: Scarabaeidae: Cetoniinae)**

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**Taxonomy, new subgenus, new species, Coleoptera, Scarabaeidae, Cetoniinae, *Philistina*, *Demba*, Phaedimini, Oriental Region, India.**

**Abstract.** A new subgenus and new species of *Philistina* MacLeay, 1838 is described and named as *Philistina* (*Demba*) *arunachalensis* subgen. et sp. nov. The newly established subgenus is accommodated in the system of an exclusively Oriental tribe Phaedimini. It is compared with other subgenera of *Philistina* and with other genera in the tribe. Taxonomical key to all subgenera of *Philistina* is given.

## INTRODUCTION

History of tribe Phaedimini is dated back to 1894, when Schoch (1894) established the section Phaedimi and placed it into the subtribe Goliathinina. Schenkling (1921) lists all genera in Goliathini. The knowledge was promoted by (Mikšič, 1971), who as the first one provided a 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) declined *Rhinacosmus* and *Prigenia* to subgenera of *Mycteristes*. *Dicronocephalus* was lately removed into Goliathini by Krikken in his suprageneric study (Krikken, 1984); he recognised 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*. Krajčik, 1998 came back to *Philistina* and recognised just two other genera *Phaedimus* and *Theodosia*. Most of authors after 1998 are following the catalogue by Krajčik.

It was (Krikken, 1984) who synonymised *Mycteristes* with *Philistina*; before this action, the name *Mycteristes* was widely used by all authors. The opinion of (Burmeister, 1842) was that Castelnau's proposal appeared before *Philistina*. Due to the fact that there is no prove for this, the author of the present study follows the opinion and taxonomical step of (Krikken, 1984).

Beside the nominotypical subgenus, the genus *Philistina* includes six different subgenera as follows: *Rhinacosmus* Kraatz, 1895; *Cephalocosmus* Kraatz, 1895; *Hemiprigenia* Mikšič, 1974; *Hemicephalocosmus* Mikšič, 1974; *Euprigenia* Mikšič, 1974 and *Prigenia* Mohnike, 1871. No taxonomical changes have been provided in the system of *Philistina* after (Krajčik, 1998). Few new species in some *Philistina* subgenera have been published within last three

decades. In males, differences between subgenera are extremely large, but females are rather uniform and identification might be very difficult unless locality data are available. This fact is the reason for most of authors, why the subgeneric concept of *Philistina* is still kept. The distributional area of the genus encompasses south and northeastern parts of the Indian subcontinent, most parts of southeast Asia countries, Malaysia, Indonesian Great Sundas and Mindanao Island in the Philippines. *Philistina* sensu stricto is nominotypical and restricted to Java only (recently collected in Bali - unpublished data). Representatives of *Rhinacosmus* are known from Mindanao and Basilan Islands (Philippines), Kalimantan and Java (Malaysia, Indonesia). *Cephalocosmus* species occur in transition zone of Palearctic and Oriental Regions from northeast India to north Vietnam and south China. *Hemicephalocosmus* with only one species is restricted to south India. *Hemiprigenia* is copying *Cephalocosmus* species as to its distribution area. *Prigenia* and *Euprigenia* are flying in Malaysia and Indonesian Sumatra, Java and Kalimantan.

An interesting insect, which revealed to be a member of *Philistina* was collected in northeastern Indian state of Arunachal Pradesh. Because it cannot be accommodated in any of known subgenera, a new subgenus is established and the new species is described in the present paper.

## MATERIAL AND METHODS

The following codens of private collection is used in the text:  
SJCP Stanislav Jákl, private collection, Praha, Czech Republic.

Specimen of the newly described subgenus and species is provided with red label for HOLOTYPE, sex symbol and St. Jákl det.2016. Exact label data are cited for the material examined, individual lines of label are indicated by a single slash (/).

The following specimens were compared with the newly described species:

- Philistina (Philistina) rhinophylla* Wiedemann, 1823 - 25 ♂♂
- Philistina (Cephalocosmus) benesi* Drumont, 1998 - 6 ♂♂
- Philistina (Cephalocosmus) campagnei* Bourgoin, 1920 - 8 ♂♂
- Philistina (Cephalocosmus) microphylla* Wood-Mason, 1881 - 1 ♂
- Philistina (Cephalocosmus) minettii* Antoine, 1991 - 12 ♂♂
- Philistina (Cephalocosmus) tonkinensis* Moser, 1903 - 20 ♂♂
- Philistina (Euprigenia) bicoronata* Jordan, 1894 - 3 ♂♂
- Philistina (Euprigenia) nishikawai* Sakai, 1992 - 1 ♂
- Philistina (Hemicephalocosmus) aurita* Arrow, 1910 - 4 ♂♂
- Philistina (Hemiprigenia) tibetana* Janson, 1917 - 2 ♂♂
- Philistina (Hemiprigenia) manai* Antoine, 2002 - 2 ♂♂
- Philistina (Prigenia) squamosa* Ritsema, 1879 - 18 ♂♂
- Philistina (Prigenia) vollenhoveni* Mohnike, 1871 - 8 ♂♂.

All specimens deposited in SJCP.

## TAXONOMY

### *Philistina (Demba)* subgen. nov.

**Type species.** *Philistina (Demba) arunachalensis* sp. nov.

**Description.** Dorsal colouration olive green to brownish with moderately developed purpureous reflection, whitish setation very short, but dense, covering whole pronotum and elytra, size (excluding pygidium) 21 mm, humeral width 9 mm. Head with one long and sharply terminated frontoclypeal horn. Declivity of frons stretching horizontally throughout total length, its lateral sides protruding in short horns heading upwards. Pronotum widest in its anterior half, sharply narrowing to apex. Punctuation of pronotum dense, rather deep but simply developed, colouration olive green with mild lustre, setation very short, whitish, covering whole surface. Scutellar shield green, rugosely punctate and bearing longer whitish setae. Elytra with two impunctate, distinctly developed ribs running longitudinally throughout total length with short interruption approximately in its anterior fifth. Disc completely flat, lateral ridge moderately sharp. Colouration brownish with metallic reflection, ribs green with golden/green reflection. Punctuation rugose with similar density throughout total length, including lateral ridge. Short, dense, whitish setae cover whole surface, apart of parts of lateral ridge, ribs and calli. Pygidium semicircular, brown, purpureously reflected. Ventrums mostly brownish to reddish with strong purpureous reflection, especially in abdomen and metasternum. Abdomen impression present, wide and rather deep. Sides punctured, bearing moderately long whitish setation. Metasternum also with medial impression. Mesometasternal process small, green, reflected, with parallel sides, its apex rounded. Sides of metasternum and prosternum covered with long whitish setation. Legs long, femurs olive green to brown, tibiae and tarsi purpureous, reflected. Protibia bidentate, distinctly elongate. Protarsi longer than protibia. Male parameres almost parallel, apical termination circularly shaped.

**Differential diagnosis.** The main character of the newly described subgenus is a sharply terminated, long frontoclypeal horn reminding of frontoclypeal horns of *Theodosia* Thomson, 1880. Such a shape of the frontoclypeal horn cannot be found in any of recently known subgenera of *Philistina*. The dorsal habitus of newly described subgenus is nearest to *Cephalocosmus* and *Hemicephalocosmus*. Some characters are also same with *Hemiprigenia*.

From *Cephalocosmus* it can be easily distinguished by the shape of elytra, which bear a discal, anteriorly closed impression, but are completely flat in the new subgenus. Elytra ribs in *Cephalocosmus* are variously curved (depending on the species), but straight in the new subgenus. The head armature in *Cephalocosmus* is also completely different, its frontoclypeal horn is short, wide, robust and its apex slightly bilobed, but long and sharply terminated in the new subgenus.

From *Hemicephalocosmus* it differs mainly by its differently shaped frontoclypeal horn, which is in *Hemicephalocosmus* similarly shaped as in *Cephalocosmus* and also by the shape of lateral horns of the clypeus which are short and simple in *Hemicephalocosmus*, but rather long with basal constriction in the newly described subgenus.

From *Hemiprigenia*, the newly described subgenus differs mainly by the absence of the frontoclypeal horn (in *Hemiprigenia*) and differently shaped lateral horns, which are heading in front in *Hemiprigenia*, but heading upwards in the new subgenus.

From other two genera of Phaedimini, *Phaedimus* and *Theodosia*, the new *Philistina* subgenus differs by the presence of abundant dorsal and ventral setation (mostly missing in *Phaedimus* and *Theodosia*) and by its unarmed pronotum, which is always armed in *Phaedimus* and *Theodosia*, with only exception of monotypical *Phaedimus* (*Hemiphaedimus*), but here the head is also missing any armature.

**Etymology.** The name of the newly described subgenus is derived from the nickname of my friend, student of Cerambycidae, who collected type specimen Luboš Dembický (Brno, Czech Republic), masculine gender.

**Distribution.** India, Arunachal Pradesh state.

#### KEY TO *PHILISTINA* SUBGENERA (MALES)

- 1 (2) Head and pronotum unarmed. Small-sized species, 15-17 mm. .... *Philistina* (*Rhinacosmus*)
- 2 (1) Head or pronotum or both armed. Size always over 17 mm.
- 3 (4) Both head and pronotum with armature. .... *Philistina* (*Philistina*)
- 4 (3) Only head or only pronotum with armature.
- 5 (8) Large species from Malaysia and Indonesia, size 25-30 mm.
- 6 (7) Species from Borneo with frontoclypeal horn and T-shaped horn in frons. .... *Philistina* (*Euprigenia*)
- 7 (6) Species from Indonesia (Java, Sumatra) and Malaysia. T-shaped horn in frons not developed, apical margin of clypeus unarmed. .... *Philistina* (*Prigenia*)
- 8 (5) Medium sized species, 18-25 mm, from continental part of Asia (excluding Malaysia).
- 9 (10) Apical margin of clypeus unarmed, lateral sides of head with horn heading forward. Ribs of elytra not developed or very vague..... *Philistina* (*Hemiprigenia*)
- 10 (9) Apical margin of clypeus with horn, lateral sides of head with horn heading approximately upwards. Elytra with two ribs.
- 11 (12) Two posterolateral thirds of elytra disc with impression, elytra ribs variously curved. ....  
..... *Philistina* (*Cephalocosmus*)
- 12 (11) Elytra completely flat, without impression, ribs running straight, not curved.
- 13 (14) Apart of head, elytra apex and pygidium without setation. Lateral horns of head very low and rounded. Frontoclypeal horn short, robust, bilobed..... *Philistina* (*Hemicephalocosmus*)
- 14 (13) Very short, tiny, but dense setation covers whole dorsal surface (except of clypeus). Lateral horns of head moderately long, their base with constriction. Frontoclypeal horn very long, heading upwards, its termination sharp ..... *Philistina* (*Demba*) subgen. nov.

**Note.** For simple and easy identification, the author tried to make the key as simple as possible. After discovery of several new species of Phaedimini during the last 2-3 decades, the original Mikšič's key (Mikšič, 1977) for *Philistina* (= *Mycteristes*) cannot be use anymore. For instance his main character for *Hemiprigenia* - distinctly developed elytra ribs, cannot be regarded anymore as a good one, especially after discovery of *Philistina* (*Hemiprigenia*) *manai* Antoine, 2002, whose elytra are completely missing ribs. Also in *Philistina* (*Hemiprigenia*) *tibetana* Janson, 1917, most of specimens I examined had only indistinctly developed or almost missing elytra ribs.

***Philistina (Demba) arunachalensis* sp. nov.**

(Figs. 1-5)

**Type locality.** NE INDIA, Arunachal Pradesh state, Dirang env., alt. 1550 m.

**Type material.** Holotype (♂) labelled: NE INDIA, ARUNACHAL PR./DIRANG vicinity; 1550 m/27°21'-23'N 32°13'-16' E/L. Dembický leg, 1.-9.VI. 2004, (SJCP).

**Description of holotype.** Olive/green to brownish with metallic to purpureous reflection. Body flat, elytra with two ribs, head with developed armature, body size 21 mm, humeral width 9 mm.

Head. Green with golden/metallic lustre. Punctuation deep and dense, setation absent. Lateral sides parallel, apical part sharply narrowing and forming long, narrow, sharply terminated frontoclypeal horn. Frons with uninterrupted, horizontally running declivity, lateral sides with basally constricted horn. Between horizontal margin of declivity and apical margin of pronotum with moderately long yellowish setation. Antennae brownish, stalk longer than pedicel.

Pronotum. Olive green, covered with short, dense yellowish setation. Widest point approximately in anterior half. All margins with simple border. Punctuation uniform, deep and dense, puncture diameters larger than interspaces.

Scutellum. Green with golden reflection, triangular, apex sharp. Whole surface rugosely punctured, bearing moderately long yellowish setation.

Elytra. Oval, widest point below humeral calli. As in other *Phaedimini*, subhumeral emargination not developed. Colouration brownish to olive green with strong purpureous lustre. Each elytron with a green, strongly shining lateral, longitudinally running rib, shortly interrupted below humeral calli. Disc completely flat. Whole surface rugosely, densely striolate, covered with short, very dense yellowish setae. Lateral ridge moderately sharp. Sutural ridge green, strongly shining, almost flat, not protruding over elytral apex. Humeral calli small, green, shining. Apical calli almost obtuse.

Pygidium. Brownish to purpureous, rather flat. Horizontally striolate throughout total length. Setation short, yellowish.

Ventrum. Metallic green to purpureous, strongly reflected. Abdomen with wide and rather deep middle impression, its sides striolate and covered with rather long whitish setation. Metasternum with impression in middle part. Punctuation of metasternum developed mainly in discal part, sides rather densely striolate and covered with long whitish setation. Mesometasternal process very small, narrow, not much protruding, its apex sharply pointed. Prosternum and mentum striolate covered with whitish setation, especially in lateral sides.

Legs. Femurs green to brownish, tibia and tarsi purpureous, reflected. Protibia elongate, bidentate protibia shorter than protarsi. Meso- and metatibia with one moderately developed carina in posterior half, inner sides with whitish setation.

Genitalia. Male parameres almost parallel running, its apical termination circular (Figs. 4-5).

**Variability and sexual dimorphism.** Female unknown.



1

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



4



5



2



3

**Differential diagnosis.** The newly described species can be easily distinguished from all other representatives of the genus *Philistina* by long, narrow, sharply pointed frontoclypeal

horn, by lateral horns of head which are constricted shortly near the base and by presence of ventral impression not only in abdomen, but also in metasternum.

**Etymology.** Named after the state of India, where the holotype male was collected.

**Distribution.** NE India, Arunachal Pradesh, Dirang env., 1500 m.

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