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**NEW SPECIES OF THE GENUS *CARPOPHILUS* STEPHENS, 1829  
(COLEOPTERA: NITIDULIDAE: CARPOPHILINAE) FROM INDIA**

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**Summary.** *Carpophilus (Ecnomorphus) jahari* Dasgupta et Pal, **sp. n.** is described from Arunachal Pradesh in Northeastern India. New species is similar to *C. (E.) plagiatipennis* Motschulsky, 1858 and *C. (E.) signatus* Grouvelle, 1908 but differs from both by the structure of male genitalia.

**Key words:** Coleoptera, Nitidulidae, sap beetle, taxonomy, new species, Arunachal Pradesh, Northeastern India, Oriental region.

**Д. Дасгупта, Т. К. Пал. Новый вид рода *Carpophilus* Stephens, 1829 (Coleoptera: Nitidulidae: Carpophilinae) из Индии // Дальневосточный энтомолог. 2019. N 378. С. 23-28.**

**Резюме.** Из штата Аруначал-Прадеш в северо-восточной Индии описан новый для науки вид *Carpophilus (Ecnomorphus) jahari* Dasgupta et Pal, **sp. n.** Новый вид сходен с *C. (E.) plagiatipennis* Motschulsky, 1858 и *C. (E.) signatus* Grouvelle, 1908, отличаясь от обоих строением гениталий самца.

**INTRODUCTION**

*Carpophilus* Stephens, 1829 is a comparatively large genus represented mainly in the Eastern hemisphere. This genus can be easily diagnosed by its shortened elytra exposing two abdominal tergites with all uncovered tergites heavily sclerotised. The current subgeneric divisions are not quite convincing as of yet (Murray, 1864; Jelinek & Audisio, 2007; Kirejtshuk, 2008). The genus requires due attention of the taxonomists and a comprehensive revision of the genus is essential (Stephens, 1829; Leschen & Marris, 2005; Jelinek & Audisio, 2007). Brown *et al.* (2012) carried out molecular analysis of *Carpophilus* species of the Pacific islands and resolved confusions about delimitation of several existing species. Some of the species are very similar and it becomes rather difficult to diagnose them externally, relying solely upon facies. The structure of male genitalia however, is more reliable in species determination.

*Carpophilus* is hitherto known from India by about 21 species with only 2 species from Sikkim and 1 from Arunachal Pradesh in Northeast India. Basak & Pal (2007) dealt with the species of *Carpophilus* from stored grains in Kolkata, India. Dasgupta *et al.* (2013) elucidated the species *C. maculatus* Murray from the Indian mainland and clarified its specific characters. While examining a small collection of Nitidulidae of Arunachal Pradesh a species of *Carpophilus* was encountered and this appeared to be a new one. This new species is described herein and compared with the closely related species.

## MATERIAL AND METHODS

Specimens were collected by one of the authors (TKP) from Arunachal Pradesh, India beneath the bark of tree stumps. The specimens examined in this study are housed in the Zoological Survey of India, Kolkata (ZSIC).

The specimen was preserved in 70% ethyl alcohol. Then it was mounted on rectangular hard paper board and pinned with proper locality and habitat data. For studying the male genitalia of the specimen, its abdomen was separated from the body. The wet abdomen was placed in 10% KOH solution for about 24 hours and then washed in distilled water and mild acetic acid solution for 10 minutes, respectively. The washed abdomen was soaked in ethyl alcohol through 30%, 50%, 70%, 90% grades of alcohol for 5 minutes in each grade and finally kept in absolute alcohol for about 10–15 minutes for complete dehydration. It was then placed on a clear glass slide with a drop of clove oil and finally dissected under a WILD M5A stereoscopic binocular microscope. The aedeagus was dissected out with two fine dissecting needles under the stereomicroscope and placed in a drop of Canada balsam on a piece of cover glass. The cover glass was glued on a piece of ivory paper and pinned with the respective specimen with required data. External features and other structures were studied using Leica ® M205A stereoscopic microscope with magnification 7.81× to 160.1× and images were recorded, when necessary. Illustrations were made with the aid of a camera lucida; detailed features of various body parts were sketched by using the digitised images, and examination under an OLYMPUS compound microscope.

## DESCRIPTION OF THE NEW SPECIES

### *Carpophilus (Ecnomorphus) jahari* Dasgupta et Pal, sp. n.

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Figs 1–8

**MATERIAL EXAMINED.** Holotype – ♂, **India:** Arunachal Pradesh, East Siang Survey, 3 km-O-Boleng, under bark of hollock (*Terminalia myriocarpa* Van Heurck & Müll. Arg.), 21.II 1989, T. K. Pal. Paratype: 1 ♀, the same label as holotype.

**DIAGNOSIS.** Body broadly elongate and sub-ovate, sub-depressed, moderately shiny, dorsum dark brown with pale yellowish paired elliptical patches (not well-defined) on elytra; lateral pronotal carina, legs and antennae except scape and club somewhat paler; cuticle nearly glabrous except some short, fine, silvery-white pubescence on sides (Fig. 1). Ventral side of body dark brown with middle of head, lateral sides of prosternum and elytra, apical portion of abdomen and legs somewhat pale; densely punctate; hypomeron rugose (Fig. 2).

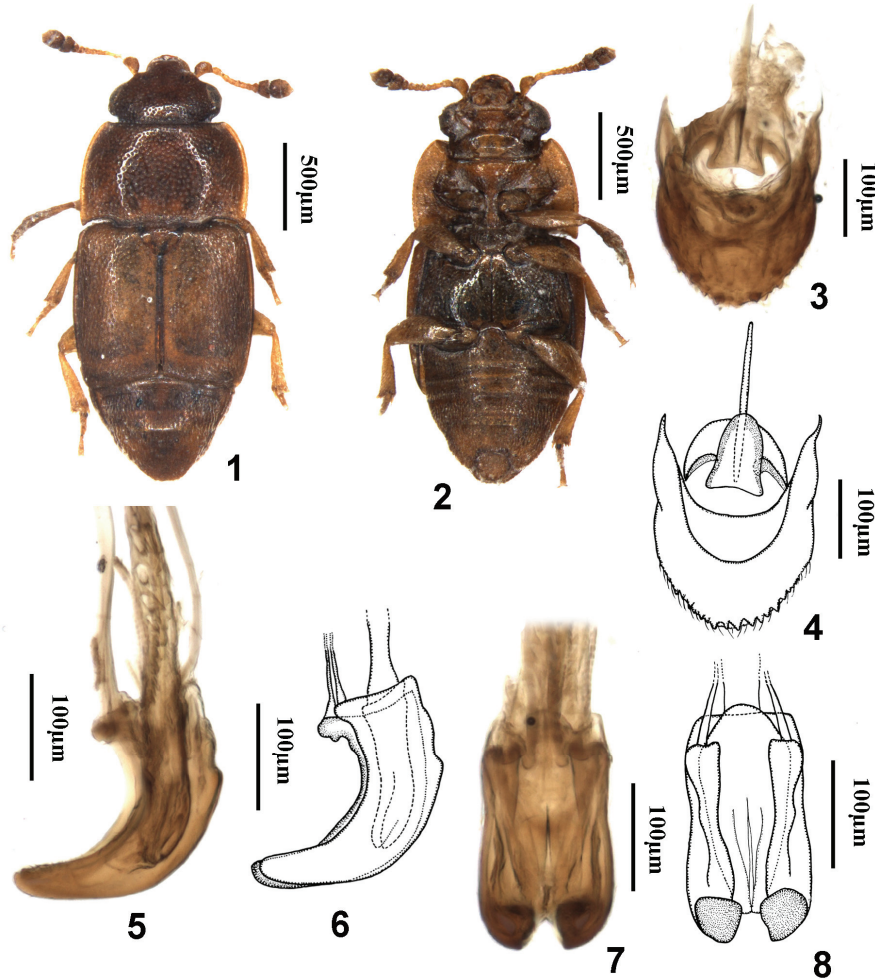
*Head* about 1.2× as broad as long, vertex rather convex, frons less so; punctures on vertex coarser than eye facets, round, separated by about 0.5–1 diameter of punctures; eyes moderately large, about 0.4× as long as head, temple short and sloped posterad. Antenna about 1.5× as long as head; antennal club 1.8× as long as broad, dark, about 0.3× as long as antenna.

*Prothorax* broader than long (1.0: 1.5), broader at base and converging towards apex, anterior margin emarginate; sides slightly arcuate in anterior half and sub-parallel posterad, posterior margin feebly emarginate and sinuate on either side near extremity, anterior angles acute, posterior angles pointed behind. Pronotum little convex, surface punctate, punctures round, slightly larger than those of vertex, moderately deep, punctures separated on top of pronotal disc by 0.5–1 diameter.

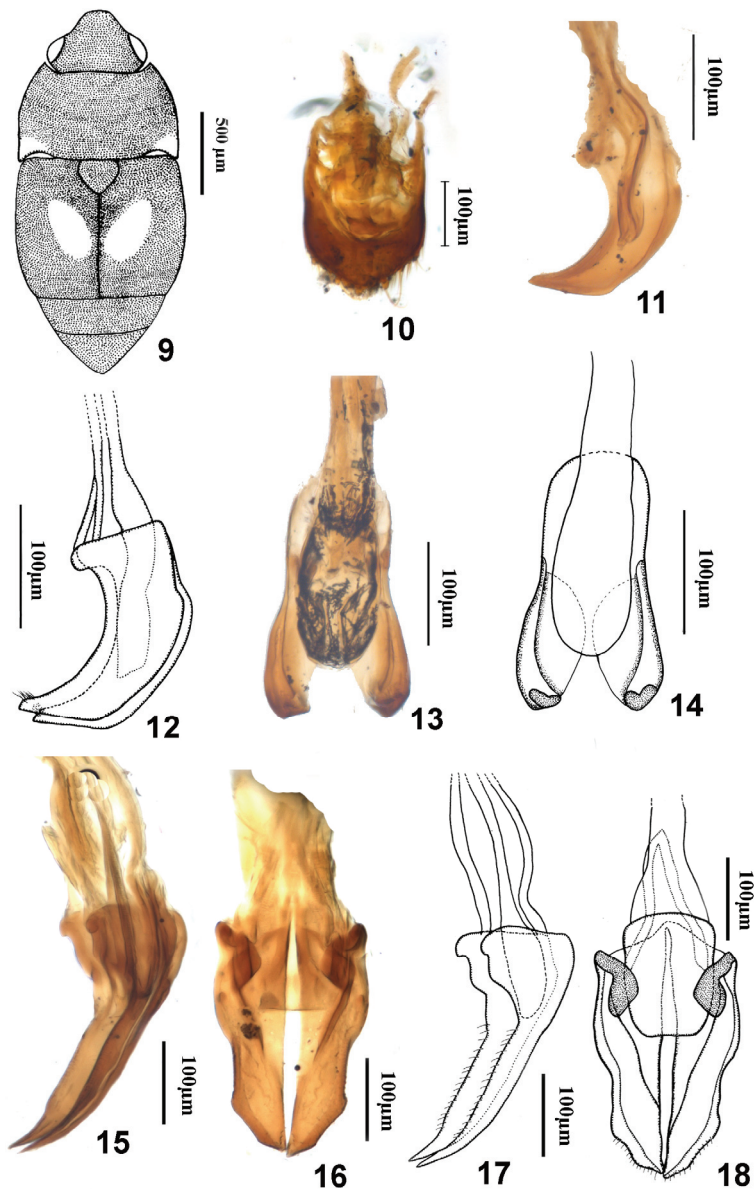
*Prosternal projection* devoid of carina; mesoventrite densely punctate, devoid of both median and lateral carina; mesocoxal borders form a small axillary space near the coxal border of metaventrite.

*Scutellar shield* transverse (1.0:1.2), somewhat triangular with sides arcuate, punctate, punctures about the same size as those on vertex, separated by about 1–3 diameters of punctures.

*Elytra* about as broad as long, anterior margin slightly emarginate, closely fit with posterior margin of prothorax, humeral angles sharply obtuse, sides arcuate, apices somewhat truncate; punctures round, about same size as those on pronotum, moderately densely arranged, separated by 1–2 diameters; pubescence very sparse, only a few tiny, fine, silvery setae present at the sides.



Figs 1–8. *Carpophilus (Ecnomorphus) jahari* sp. n. 1 – body, dorsal view; 2 – the same, ventral view; 3 – anal sclerite (photo), ventral view; 4 – the same (line diagram); 5 – male genitalia (photo), lateral view; 6 – the same (line diagram); 7 – male genitalia (photo), ventral view; 8 – the same (line diagram).



Figs 9–18. *Carpophilus* spp. 9–14 – *C. (Ecnomorphus) plagiaticornis* Motschulsky, 1858: 9 – body, dorsal view; 10 – anal sclerite and spiculum gastrale; 11 – male genitalia (photo), lateral view; 12 – the same (line diagram); 13 – the same (photo), ventral view; 14 – the same (line diagram); 15–18 – *C. (E.) signatus* Grouvelle, 1908, male genitalia: 15 – photo, lateral view; 16 – photo, ventral view; 17 – line diagram, lateral view; 18 – line diagram, ventral view.

*Exposed tergites* of abdomen 1.4× broader than long, about 0.5× as long as elytra, punctures smaller and much shallower than those on elytra; pubescence sparse, posteriorly directed.

*Legs* with tibiae less flattened; tarsi about 0.5× as long as tibiae.

*Aedeagus*. Male genitalia in lateral view (Figs 5, 6) somewhat L-shaped, with corners curved, apex rounded; in ventral view (Figs 7, 8) the lateral lobes of tegmen (parameres) are longer than broad, apices upturned. Anal sclerite accommodates the spiculum gastrale (Figs 3, 4); apical margin of anal sclerite somewhat granular with short and sparse setae.

MEASUREMENTS (in mm.). Total length 2.28, width of head across eyes 0.46, length of antenna 0.58, length and width of prothorax 0.57 and 0.93, length and width of elytra together 0.89 and 0.98 (n=1).

DIAGNOSIS. New species shows resemblances with *Carpophilus (Ecnomorphus) plagiaticipennis* Motschulsky, 1858, but can be differentiated by pale patches on elytra not well-defined; anal sclerite sparsely setose; male genitalia in lateral view shows L-shaped parameres with apex rounded, in ventral view the sides of parameres are subparallel and apex distinctly upturned; the shape of the body being slightly more elongated [in *C. plagiaticipennis* pale patches on elytra more or less elliptical and edges well-defined (Fig. 9); anal sclerite densely setose apically (Fig. 10); male genitalia in lateral view (Figs 11, 12) shows sickle-shaped parameres with pointed apex, in ventral view (Figs 13, 14), the sides of the parameres are distinctly diverging posterad, apex slightly upturned; shape of the body proportionately broader]. New species also shows certain resemblances with *C. (E.) signatus* Grouvelle, 1908 but can be differentiated by its anterior pronotal angles acute and posterior pronotal angles pointed behind, anterior margin of pronotum emarginate, sides slightly arcuate in anterior half and sub-parallel posterad, posterior margin feebly emarginate and sinuate on either side near extremity; parameres in ventral view having uniform outer margins, somewhat parallel, with apex upturned; in lateral view, parameres L-shaped, apex rounded, devoid of any setae (in *C. signatus* anterior and posterior angles of pronotum broadly rounded, anterior margin of pronotum almost straight, sides uniformly arcuate, posterior margin almost straight with a median notch above scutellum; parameres in ventral view (Figs 16, 18) having irregular outer margins, and converge apically like folded hands, apex pointed; in lateral view (Figs 15, 17), broad base of parameres abruptly narrowed behind basal third with acute apices, somewhat sickle-shaped, studded with short setae on inner margins in apical three-fourths).

DISTRIBUTION. India: Arunachal Pradesh.

ETYMOLOGY. The species is named after Mr. Jaharlal Dasgupta, father of one of the authors (JDG) for his immense support in the research work.

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