



A NEW SPECIES OF THE GENUS *POGONUS* DEJEAN (COLEOPTERA: CARABIDAE: TRECHINAE) FROM THE NORTH MALABAR REGION IN SOUTH INDIA

K SHIGINA^{1*} AND K THOMAS SABU²

¹Entomology Research Lab, Post Graduate & Research Department of Zoology,
St. Joseph's College (Autonomous) Devagiri, Calicut 673008, Kerala, India

²Department of Zoology, University of Calicut, Thenhipalam 673635, Kerala, India

*Email: shiginapurushu@gmail.com (corresponding author): ORCID ID 0000-0001-5858-3980

ABSTRACT

Tribe Pogonini of the carabid subfamily Trechinae is represented by a single genus *Pogonus* Dejean, 1821 with a single species *Pogonus biroi* Csiki, 1907 in the Oriental region. A new species, *Pogonus malabarensis* sp.nov., is described from the north Malabar region in south India with a key to the Oriental species of the genus.

Key words: Pogonini, Bembidiini, Trechini, *Pogonus biroi*, *Pogonus malabarensis* sp.nov., ground beetles, light trap, oriental region, Chambad, Sri Lanka

Subfamily Trechinae (Carabidae) is represented by five tribes with 328 genera and 5317 species at the global level (Lorenz, 2022). Among the five tribes of Trechinae, Pogonini Laportae, 1834 is represented in all zoogeographical regions of the world, but is most diverse in the Palaearctic region (Bosquet, 1997). Tribe Pogonini represented by 12 genera with 85 species (Anichtchenko, 2020; Lorenz, 2022). Trechinae in India falls under three tribes (Bembidiini Stephens, 1827, Trechini Bonelli, 1810 and Pogonini Laporte, 1834). They are small to medium-sized ground beetles with a size range of 1.5 to 7 mm (Andrewes, 1935). Among the three Indian tribes, Pogonini is represented by a single genus *Pogonus* Dejean, 1821 in Oriental region with a single species (*Pogonus biroi* Csiki, 1907) distributed in India and Sri Lanka (Andrewes, 1935). In the present work, one new species *Pogonus malabarensis* sp. nov., is described from south India with a key to the Oriental species of the genus. Out of the 51 known species of genus *Pogonus*, 30 species are described with female specimens alone by earlier workers, and colour of the body, punctures on pronotum, pores on elytral interval three, isodiametric meshes on the body etc. are used as the diagnostic characters for the 30 species described with female specimens (Chaudoir, 1842, 1871; Dejean, 1821, 1828; Andrewes, 1935; Habu, 1954; Baehr, 1984). Images of genitalia of the species of the genus are not available for this group for comparison.

MATERIALS AND METHODS

Specimens were collected with light traps placed on the hedgerows of a rice paddy field at Chambad (11°52'23.5"N 75°30'24.5"E) from Kannur district

in the north Malabar region of south Kerala during monsoon season (June to August). Identification was done using keys in Andrewes (1935) and by comparing with the holotype image of *Pogonus biroi* Csiki, 1907 in Natural history museum in Budapest, Hungary (HNHM) (Europeana Foundation, 2009) and also the images from Muséum National d'Histoire Naturelle, Paris, France (MNHN). Images were taken using Leica M205C Stereo zoom microscope fitted with Leica MC 170 HD digital camera. Measurements are taken with Leica LAS V4.5 software. Verified specimens are deposited in the National Insect Collections of Zoological Survey of India Western Ghats Regional Centre, Kozhikode (ZSIK). Abbreviations used- TLA: body length from apex of mandibles to pygidium; TLB: body length from apex of labrum to apex of elytra; PL: length of pronotum along median line; PW: maximum width of pronotum; EL: maximum length of closed elytra; EW: maximum width of elytra; ZSIK: Zoological Survey of India, The Western Ghats Regional Centre, Kozhikode

RESULTS AND DISCUSSION

A. Images of genitalia of the species of the genus

Key to the species of genus *Pogonus* Dejean (1821) in Oriental region

1. Surface of head and disc of pronotum without punctures and wrinkles; hind angles of pronotum obtuse, basal area of pronotum depressed with fine punctures without lateral carina; obsolete isodiametric meshes on head and pronotum; elytral surface including apex uniformly brown

-*Pogonus biroi* Csiki, 1907
- Surface of head and disc of pronotum with punctures and transverse wrinkles; hind angles of pronotum acute, basal area of pronotum depressed with dense coarse punctures and distinct lateral carina; distinctly visible isodiametric meshes on head and pronotum; elytral surface brown with yellow translucent markings at the apex of elytral border.....*Pogonus malabarensis* sp. nov.

B. *Pogonus malabarensis* sp. nov. (Fig. 1A-E)

Type: Holotype (female), Paratypes 2 ex. (2 females). Labelled 'India: Kerala: Chambad, paddy field (11°52'23.5"N75°30'24.5"E), 'Light trap', 20.viii.2019, Coll. Shigina K'. Types deposited in the Western Ghats Regional Centre, Kozhikode (ZSIK).

Description: Length. Holotype (Female): 6.7 mm
Colour: Head, pronotum, prosternum, proepisternum, metasternum, metepisternum and abdominal ventrites greenish brown colour; mandibles, antennal segments five to 11, legs and proepisternal margin dark brown; maxillary palpi, first antennal segment reddish brown with dark patch, segments two to four yellowish brown; eyes pale grey; mentum dark brown (Fig. 1A). Head: Shiny with fairly deep, nearly parallel frontal furrows extending and diverging beyond clypeus. Antennae not extending beyond base of elytra. Surface of head with punctures and transverse wrinkles. Neck constriction indistinct. Labrum truncate and six setose, rounded anteriorly with few setae. Clypeus rectangular with two

setae and the clypeal suture faint. Ligula wide, truncate at apex, two setae at middle arising from one pore, paraglossae small, free at apex and extending beyond ligula. Mentum with bifid median tooth with two setae. Submentum slightly emarginate in the middle of apex and strongly emarginated at middle of base with a pair of setae on each side. Antennae filiform, joint one stout, two shorter than three, pubescent from apex of scape and densely pubescent from joint four. Palpi pubescent, penultimate segment long, slender, in the shape of an inverted cone, apical segment fusiform. Mandibles short but stout, apex pointed. Eyes prominent, not enclosed by genae. Gula large and wide. Isodiametric meshes of microsculpture distinct. Pronotum: Prothorax convex, subquadrate, bisetose, strongly rounded anteriorly and more sinuate posteriorly close to the hind angles. Pronotum convex with wavy transverse wrinkles and coarse punctures at the disc. Hind angles acute with well-developed carina at each side. Median line of pronotum deep and well impressed. Basal area of pronotum evidently depressed with dense coarse punctures and front transverse impression with few coarse punctures. Isodiametric microsculptures distinct throughout (Fig. 1B).

Elytra: Shiny, nearly parallel sides, wider than prothorax, basal border entire, emarginated at middle. Well-developed scutellar striole. Stria with deep punctures and is completely absent towards apex. All Stria free at base, rounded with small prominence at the tip. Elytral interval three with five pores; first three pores on stria three, fourth and fifth pore on interval three; elytral striae six and seven fused at apex. Isodiametric microsculptures distinct throughout the elytra (Fig. 1C).

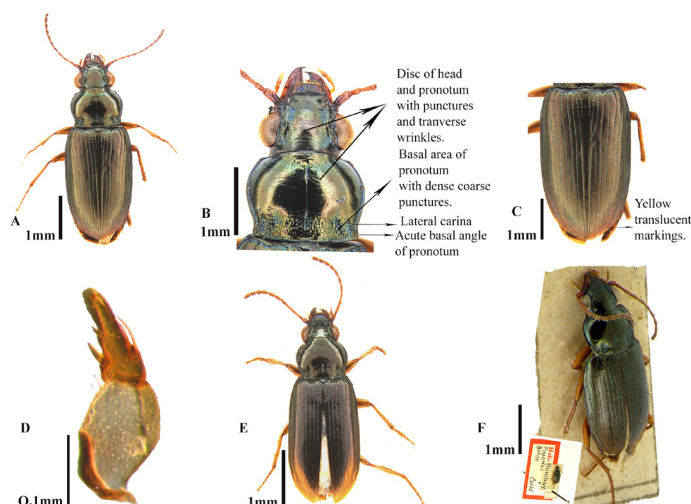


Fig. 1. A–E: *Pogonus malabarensis* sp. nov., A: Dorsal habitus; B: Head and pronotum; C: Elytra; D: Female genitalia; E: Dorsal habitus of paratype with variation; and F: Dorsal habitus of *Pogonus biroi* holotype.

Hind wings: Well developed. Legs: Densely pubescent from middle of tibia, protibia truncate at apex, claws simple. Venter: Venter region densely punctate and consist of distinct network of isodiametric meshes including metacoxa. Posterior border of abdominal segments yellowish brown. Metepisternum wide and bordered. Three to five abdominal ventrites with paired setiferous pores at middle and sixth abdominal ventrite with four setiferous pores. Female genitalia: Gonocoxite one with two setae at apex; gonocoxite two narrow and elongate, slightly curved, with two ventrolateral ensiform setae near base and one nematiform setae in the middle (Fig. 1D).

Measurements: Holotype, TLA = 6.7 mm, TLB = 6.3 mm, PL = 1.3 mm, PW = 1.9 mm, EL = 3.8 mm, EW = 2.40 mm; Paratype (n=2), TLA = 6.1–6.7 mm, TLB = 5.8–6.3 mm, PL = 1.1–1.3 mm, PW = 1.8–1.9 mm, EL = 3.5–3.8 mm, EW = 2.3–2.5 mm.

Distribution: INDIA: Kerala: Kannur: Chambad.

Etymology: Named after the geographical collection region.

Diagnosis: *Pogonus malabarensis* **sp.nov.**, is morphologically similar to *P. biroi* (Fig. 1F) but strongly differs from *P. biroi* by, basal angle of pronotum acute in contrast to the obtuse basal angle of pronotum in *P. biroi*; surface of head and disc of pronotum, excluding basal area with fine punctures and transverse wrinkles in contrast to the impunctate head and disc of pronotum (other than basal area) and without transverse wrinkles in *P. biroi*; basal area of pronotum with dense coarse punctures with distinct lateral carina on each side in contrast to the fine punctures on basal area of pronotum and without lateral carina in *P. biroi* and absence of yellow translucent markings at the apical border of elytra in *P. biroi*.

Remarks: One paratype (Fig. 1E) is with yellow translucent markings covering the entire apical half of elytra which we consider as a variation of other types of *Pogonus malabarensis* **sp.nov.**, with the apex of elytral border with yellow translucent markings.

ACKNOWLEDGEMENTS

Financial assistance provided by the Council for Scientific and Industrial Research (CSIR, Govt. of India 08/453(0013)/2019-EMR-I dated 09/04/2019) to first

author and DST-SERB Carabidae taxonomy project to the second author are gratefully acknowledged. Thierre Dueve and Azadeh Taghavian (Muséum National d'Histoire Naturelle, Paris) are acknowledged for providing images; Paul Aston for literature support; and Aswathi S B, Nijisha K, Neethu V P and Anagha Sudhakar V S (St. Joseph's College (Autonomous), Devagiri for logistical support.

FINANCIAL SUPPORT

Financial assistance was provided by the Council for Scientific and Industrial Research (CSIR, Govt. of India 08/453(0013)/2019-EMR-I dated 09/04/2019) to the first author and DST-SERB Carabidae taxonomy project to the second author.

AUTHOR CONTRIBUTION STATEMENT

Shigina K and Sabu K Thomas analyzed the specimens, verified the review and drafted the manuscript.

CONFLICT OF INTEREST

No conflict of interest.

REFERENCES

- Andrewes H E. 1935. The fauna of British India, including Ceylon and Burma. Coleoptera. Carabidae. Vol. II. – Harpalinae. Taylor & Francis I. London. 323 pp.
- Behr M. 1984. *Pogonus nigrescens* sp.n. from north Queensland (Coleoptera: Carabidae). Journal of the Australian Entomological society, 23: 169-171.
- Bousquet Y, Laplante S. 1997. Taxonomic review of the new world Pogonini (Coleoptera: Carabidae). The Canadian Entomologist, 129: 699-731. doi:10.4039/Ent129699-4.
- Choudoir M. 1871. Essai monographique sur le groupe des pogonides. Annales de la Societe Entomologique de Belgique, 14: 21-61.
- Csiki E. 1907. Coleoptera nova in Museo Nationali Hungarico. Annales Historico-Naturales Musei Nationalis Hungarici, 5: 574-578.
- Dejean PEMA. 1828. Species general des coleopteres, de la collection de M. le Comte Dejean, Tome troisieme, Paris. 566 pp.
- Habu A. 1954. Description of some new Carabid-beetles (Coleoptera) from Japan. Bulletin of the National Institute of Agricultural Sciences. Ser. C: 281-294.
- Laporte F L N. 1834. Ou description d'insectes nouveaux: et observations sur leur synonymie. Études entomologiques, Paris. 159 pp.
- Lorenz W. 2022. Carab Cat: Global database of ground beetles (v.03 (08/2021), In: Catalogue of Life, [author list in alphabetical order] (ed.) (2021). Species 2000, Naturalis, Leiden, available from <https://www.catalogueoflife.org/> (accessed 20 May 2022).
- Milena P. 2009. Europeana Foundation. Meta-aggregator and display space for European digitized works, (v.01 (02/2009) available from: <https://www.europeana.eu/en>.

(Manuscript Received: May, 2023; Revised: August, 2023;

Accepted: August, 2023; Online Published: September, 2023)

Online First in www.entosocindia.org and indianentomology.org Ref. No. e23279