



## New records of darkling beetles (Coleoptera: Tenebrionidae) from Kerala State, India

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### Abstract

Taxonomic studies of darkling beetles maintained at the National Zoological collections, Zoological Survey of India, Kozhikode, resulted in reporting of seven species that were previously not recorded from the state of Kerala.

**Keywords:** Kerala, tenebrionidae, new record, national zoological collection

### Introduction

Family Tenebrionidae, commonly referred to as “darkling beetles” form one of the largest and most speciose group under order Coleoptera. They show high variation in colour and body shape. Sometimes elongate, flat shaped or oval, they also show resemblance with other beetle families. They are usually dark, but sometimes with bright metallic colours. Diagnostic characters of the family include complete first abdominal ventrite, notched eyes, 11 segmented antennae that can be of different types, concealed antennal insertion, 5-5-4 tarsal formula rarely 4-4-4. So far from Kerala, 41 species of 21 genera under 11 tribes belonging to 04 Sub families of darkling beetles are known (Paper communicated). This study adds seven species of darkling beetles to the tenebrionid fauna of Kerala.

### Materials and Methods

The material of National Zoological collections, Zoological Survey of India, Kozhikode, Kerala were sorted out, set pinned and identified. For classification, Bouchard *et al.*, (2005) <sup>[1]</sup> was followed and for identification purpose references like Fairmaire, 1894 <sup>[2]</sup>, Kaszab, 1952, Schawaller, 1997 <sup>[6]</sup> and Iwan *et al.*, 2010 <sup>[3]</sup> were considered. Distribution and synonyms were extracted from the above mentioned references. The specimens were examined under LEICA M205A stereo zoom microscope and imaged using LEICA DFC 500 digital camera attached. Studied specimens were deposited and registered at Zoological Survey of India, Western Ghat Regional Centre, Kozhikode, Kerala, India (ZSIK). Short diagnosis are also given.

### Results

#### Subfamily: Tenebrioninae Latreille, 1802

#### Tribe: Toxicini Lacordaire, 1859

#### *Cryphaeus punctipennis* (Gravely, 1915)

1915. *Anthracias punctipennis* (Gravely), *Rec. Indian Mus.* 8: 529.

Material examined: 01 ex. Kerala, Kozhikode, ZSI campus, V.D. Hegde coll. 10.v.2021, ZSIK Regd. No. ZSI/WGRC/I.R.- INV. 17622.

Diagnosis: Head in front somewhat rounded, closely punctured, eyes completely divided by pair of glabrous supraorbital horns, 3 to 4 segmented antennal club, closely punctured pronotal surface, numerous punctures arranged in double or triple rows irregularly in elytra.

Distribution: INDIA: Arunachal Pradesh, Himachal Pradesh, Kerala (Kozhikode), Uttar Pradesh and West Bengal.

#### Tribe: Opatrini Brulle, 1832

#### *Gonocephalum abnormale* Kaszab, 1952

1952. *Gonocephalum abnormale* Kaszab, *Ent. Arb. Mus. Georg Frey* 3: 634.

Material examined: 06 exs. Kerala, Pathanamthitta, Kakkad River, Angamoozhy, Goodrickal range, P.M. Sureshan & party coll. 30. x. 2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 19546-19551.

Diagnosis: Length about 13 mm, body elongated, arched, parallel, large and finely sculptured, upper side with dense hairs, broad head, antennae almost reach the base of pronotum, pronotum scarcely twice as wide as long.

Distribution: INDIA: Chhattisgarh, Kerala (Pathanamthitta), Tamil Nadu and Uttarakhand.

Elsewhere: Myanmar, Amherst Distr., Kawkaireih.

#### *Gonocephalum lewisi* Blair, 1922

1922. *Gonocephalum lewisi* Blair, *Rec. Ind. Mus.* 24 (3): 291. – Gebien 1939: 448; Kaszab 1952: 491, 1979: 62.

Material examined: 31 exs. Kerala, Kozhikode, Planetarium campus, V.D. Hegde coll. 24. viii. 2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 19168-19198; 03 exs. Kerala, Pathanamthitta, Kakkad River, Angamoozhy, Goodrickal range, P.M. Sureshan & party, coll. 30. x. 2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 19552-19554; 02 exs. Kerala, Kollam, Shendurney WLS, P. Girish Kumar & party coll. 06.xii.2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 19943-19944.

Diagnosis: Length about 6 mm, oblong, outside corner of cheeks rounded, surface white hairy and dense, head transverse, moderately flat, antennae slender, last four segments form club, thorax strongly convex, elytra as wide as thorax at the base, legs moderately stout.

Distribution: INDIA: Kerala (Kollam, Kozhikode and Pathanamthitta)

Elsewhere: Sri Lanka.

Remark: It was reported from India long back, without any particular place/location.

#### *Gonocephalum vagum* (Steven, 1829)

1829. *Opatrum vagum* Steven, *Nouv. Mèm. Soc. Nat. Moscou* 1:96.

1858. *Opatrum planatum* Walker, *Ann. Mag. Nat. Hist.* (3) 2: 284.

1894. *Hopatrum arenarium* Fairmaire, *Ann. Soc. Ent. Belg.* 38:17. – Blair 1922: 269. hom. nov. nom. preoccup. nec *Opatrum arenarium* Fabricius, 1775.

Material examined: 03 exs. Kerala, Kozhikode, ZSI campus, V.D. Hegde coll. 08.v.2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 17606–17608; 03 exs. Kerala, Kozhikode, ZSI campus, V.D. Hegde coll. 13.v.2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 17609-17611; 04 exs. Kerala, Kozhikode, ZSI campus, V.D. Hegde coll. 05.vi.2021, ZSIK Regd. Nos. ZSI/WGRC/I.R.- INV. 17829-17832; 07 exs. Kerala, Kozhikode, ZSI campus, V.D. Hegde coll. 29. iv. 2022, ZSI/WGRC/I.R.- INV. 21164-21170.

Diagnosis: Length about 7 mm, hairs on upper surface short and gray, elytral spaces scarcely arched.

Distribution: INDIA: Kerala (Kozhikode), Odisha, Sikkim and West Bengal.

Elsewhere: China, Nepal, Sri Lanka and Yunnan.

#### ***Heterotarsus foveoseriatus* Fairmaire, 1894**

1894. *Heterotarsus foveoseriatus* Fairmaire, *Ann. Soc. Ent. Belg.* 38: 24.

Material examined: 01 ex. Kerala, Kozhikode, ZSI campus, V.D. Hegde coll. 18.v.2021, ZSIK Regd. No. ZSI/WGRC/I.R.- INV. 17623.

Diagnosis: About 11 mm in length, characterized by sculptured elytra, completely flat elytral spaces, fine and faded granules, longitudinal rows large, finely granulated elytral base, densely punctured head and pronotum, pronotum strongly transverse, slightly arched, broadly curved sides, anterior corner rounded.

Distribution: INDIA: Chhattisgarh, Kerala (Kozhikode), Madhya Pradesh and West Bengal.

#### **Tribe: Pedinini Eschscholtz, 1829**

##### ***Eucolus ardoini* Kaszab, 1975**

1975. *Eucolus ardoini* Kaszab, *Acta zool. Acad. Sci. Hung.*, 21 (3-4): 285 – Iwan 1997a: 259, 2002: 68.

Material examined: 01 ex., Kerala, Palakkad, Nilgiri Biosphere Reserve, M.B. Raghunathan coll. 21.vi. 2021, ZSIK Regd. No. ZSI/WGRC/I.R.- INV. 21783.

Diagnosis: Length about 15 mm, pronotum coarsely punctured and side rounded, transverse curvature of pronotum extends to the edge, elytral spaces arched, alternating one not raised more, fine, less deepened row points of elytra.

Distribution: INDIA: Kerala (Palakkad) and Tamil Nadu.

##### ***Eucolus polinierii* Mulsant & Rey, 1853**

1853. *Eucolus polinierii* Mulsant & Rey, *Mém. Acad. Lyon* 292. – Kaszab 1975b: 285; Iwan 1990b: 430, 1997a: 259, 2002: 68.

1910. *Pseudoblaps polinierii*: Gebien: 274, 1938b: 294.

Material examined: 01 ex., Kerala, Palakkad, Nilgiri Biosphere Reserve, M.B. Raghunathan coll. 21.xi.1994, ZSIK Regd. No. ZSI/WGRC/I.R.- INV. 17827.

Diagnosis: Length about 16 mm, pronotum with fine punctures, side of pronotum slightly wavy, transverse curvature of pronotum does not extends to the edge, alternating elytral spaces more raised, coarse and deep row points of elytra.

Distribution: INDIA: Kerala (Palakkad) and Tamil Nadu.

Elsewhere: Sri Lanka.



**Fig 1:** *Gonocephalum abnormale* Kaszab, 1952



**Fig 2:** *Gonocephalum lewisi* Blair, 1922



**Fig 3:** *Gonocephalum vagum* (Steven, 1829)



**Fig 4:** *Heterotarsus foveoseriatus* Fairmaire, 1894



Fig 5: *Eucolus ardoini* Kaszab, 1975



Fig 6: *Eucolus polinierii* Mulsant and Rey 1853



Fig 7: *Cryphaeus punctipennis* (Gravely, 1915)

### Conclusion

This study contributed to the tenebrionid fauna of Kerala, by providing seven new records of darkling beetles to the state. Output of the present study will be useful for further research on Tenebrionidae of Kerala and India.

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