



**First record of vesicant beetles:  
*Paederus nigricornis* Bernhauer, 1911 from south India;  
*P. extraneus* Wiedemann, 1823 and *P. alternans* Walker, 1858  
(Staphylinidae, Paederinae) from Kerala**

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**ABSTRACT:** Three vesicant beetles were reported. *Paederus nigricornis* Bernhauer, 1911 from south India and, occurrence of *P. extraneus* Wiedemann, 1823 and *P. alternans* Walker, 1858 in Kerala. Taxonomic description of each species with remarks is presented. © 2023 Association for Advancement of Entomology

**KEYWORDS:** *Paederus dermatitis*, geographical distribution, taxonomic description

The genus *Paederus* is a medically important group of rove beetles and a threat to human beings. Around fifty species of *Paederus* are known to cause *Paederus dermatitis*. Even though a number of *Paederus dermatitis* cases have been reported from various parts of India, taxonomic work on this group in India is insufficient. *Paederus* Fabricius, 1775 is a genus of beetles under the subfamily Paederinae of the family Staphylinidae (rove beetles). More than 600 species of *Paederus* have been described so far, among which 50 species of *Paederus* beetles are known to cause *Paederus dermatitis* (Veraldi *et al.*, 2013). *Paederus* beetles produce vesicant toxin, pederin causing skin irritation (Uzunođlu *et al.*, 2017). These beetles are predators and are commonly found in paddy fields and other plantations (Vineesh *et al.*, 2022). Most of them live in moist areas, such as at the edges of freshwater lakes, riverine floodplains, marshes and rice fields (Frank and Kanamistu, 1987). They are beneficial to agriculture as they eat crop pests

(Mammino, 2011). At the same time they are harmful to humans as they cause *Paederus dermatitis*. When crushed against the skin, they release the haemolymph toxin Pederin that causes *Paederus dermatitis* which is also known as spider lick, night burn and dermatitis linearis (Nasir *et al.*, 2015). Thirty five species of the *Paederus* are reported from India which includes thirty one species listed by Cameron (1931) and the four species by Löbl and Löbl (2015) and Biswas and Sen Gupta (1982) and this 20 species are from south India. *Paederus dermatitis* is very common in tropical regions like Kerala (Kambil, 2018). Identification of the dermatitis causing *Paederus* species is necessary, prior to taking preventive measures against them. But taxonomic studies on this genus are inadequate at the subgeneric and species levels (Nikbakhtzadeh *et al.*, 2012).

Specimens were collected during the period 2018–2020 using Light traps from the paddy fields at

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Ambalavayal (11.6165° N; 76.2140° E) and Theneri (11.6386° N; 76.1407° E), Wayanad district. Collected beetles were transferred into vials (containing 70% alcohol). All the collected beetles were examined using Stereo Zoom Trinocular Microscope (LABOMED – 200 MAR, CODE:- ZM 45 TM). Specimens were identified using the taxonomic key available in Cameron, 1931 and verified by the photograph given in Sar and Ilango, 2016. Photographs of the specimens were taken with a Leica MC170HD camera attached to a Leica M205C stereomicroscope. Identified specimens are deposited to the insect collections of Zoological Survey of India, Western Ghats Regional Centre, Kozhikode station.

Abbreviations used: Measurements -

TL: Total length of the specimen; AL: Antennal Length; HL: Head length i.e., from the anterior margin of clypeus to posterior margin of head; HW: Head Width including eyes; PL: Pronotal length; PW: Pronotal width; EL: Length of elytra; EW: Width of elytra.

***Paederus nigricornis* Bernhauer, 1911 (Fig. 1)**

*Paederus nigricornis* Bernhauer 1911: 61; Bernhauer and Schubert 1912: 209; Cameron 1925: 36; id. 1928: 560; id. 1931: 47; Scheerpeltz 1933:1226; Blackwelder 1939: 112; Scheerpeltz 1957: 474; Coiffait 1978: 553; id. 1982: 33; Frank 1988: 123; Thapa 2000: 260; Willers 2001: 21; Löbl and Smetana 2004: 611; Li *et al.*, 2013; Nikbakhtzadeh *et al.*, 2012: 5; Sar and Hedge 2015: 102; Löbl and Löbl 2015: 987; Sar and Ilango 2016: 234.

Specimen examined: 1♀, 19.ii.2020, Theneri, Wayanad district (11.6386° N; 76.1407° E), Coll. Kavyamol P M, Light trap.

Diagnosis: Measurements: TL: 7.13 mm; AL: 2.26 mm; HL: 0.91 mm; HW: 0.98 mm; PL: 0.93 mm; PW: 0.74 mm; EL: 1.26 mm; EW: 1.22 mm

Colour: Head, first visible and last two segments of the abdomen black in colour; thorax and second to fourth abdominal segments red; elytra blue; antennae black coloured with the first two joints

slightly testaceous; palpi and legs, including the coxae black.

Head: Elongate, longer than broad and broader than the thorax. The eyes prominent and the post - ocular region almost straightly converge to the neck. Sculpture consists of big and small punctures, the post-ocular region with a few setae, otherwise smooth.

Thorax: Narrow, oval and longer than broad, impunctate at the middle, the sides sparingly and very finely punctured with a few erect black setae.

Elytra: Slightly longer and broader than the thorax, parallel, rather finely and not very closely punctured, with fairly long, semi-erect, black pubescence.

Abdomen: Closely punctured at the base of the first visible segment, elsewhere sparingly punctured, the pubescence yellow with a few longer black setae.

Distribution: India (Kerala: Wayanad, Theneri; Himachal Pradesh: Simla Hills; Uttarakhand: Chakrata district Garhwal hills; Sikkim; Uttar Pradesh: Allahabad-Ramghat; Mizoram; West Bengal: Darjeeling, Nurbong and Mahanadi Valleys). Elsewhere: Nepal: Sundarijal, Ramechhap: Khimti Khola, Shivalaya; Iran (Mt. Taftan); China (Hubei, Sichuan, Xizang,); Afghanistan; Pakistan.

Remarks: First record of dermatitis causing *Paederus nigricornis* from south India.

***Paederus extraneus* Wiedemann, 1823 (Fig. 2)**

*Paederus extraneus* Wiedemann 1823:13; Dejean 1833: 65; Erichson 1840: 661; Kraatz 1859: 152; Gemminger and Harold 1868: 627; Bernhauer and Schubert 1912: 206; Cameron 1925: 35; id.1931: 41; Scheerpeltz 1933: 1223; Frank 1988: 110; Taneja *et al.*, 2013:135; Gopal 2014: 4736.

Specimens examined: 2♂♀, 19.ii.2020, Theneri, Wayanad district (11.6386° N; 76.1407° E), Coll. Kavyamol P M, Light trap.

Diagnosis: Measurements: TL: 6.28 mm; AL: 2.51 mm; HL: 0.92 mm; HW: 0.96 mm; PL: 1.15 mm; PW: 1.05 mm; EL: 1.62 mm; EW: 1.44 mm

Colour: Head black, elytra blue, thorax and first four segments of the abdomen red; antennae and palpi dark at base; first two joints of the antennae slightly yellowish below and dark above, the rest black; palpi dark testaceous, the third joint black and the mandibles black; thorax red and black coloured scutellum; abdomen black with the first four segments red and sternum black; legs with black coxae.

Head: Orbicular and as broad as the thorax, rather convex above, shining, closely and finely punctured.

Thorax: Somewhat oval and almost as broad as the elytra, a little longer than broad, the sides a bit rounded, narrowed behind, convex, closely and finely punctured, middle portion without punctures.

Elytra: Hardly a fourth longer than the thorax, closely, not very strongly punctured, slightly shining and covered with white pubescence.

Abdomen: Abdomen with fine punctures, pubescence long and white.

Distribution: India (Kerala: Wayanad; Theneri; West Bengal; Andhra Pradesh; Karnataka: Manipal). Elsewhere: Nepal.

Remarks: First record of dermatitis causing *Paederus extraneus* from Kerala.

### *Paederus alternans* Walker, 1858 (Fig. 3)

*Paederus alternans* Walker 1858: 205; Gemminger and Harold 1868: 626; Cameron 1925: 34; id. 1930: 332; id. 1931: 41; Scheerpeltz 1933: 1220; id. 1935: 607; id. 1965: 103; id. 1978: 196; Biswas and Sen Gupta 1982: 150; Frank 1988: 100; Willers 2001: 21; Löbl and Smetana 2004: 614; Li *et al.*, 2013: 336; Löbl and Löbl 2015: 986.

Specimens examined: 1♂, 10.iii.2018, Ambalavayal, Wayanad district (11.6165° N; 76.2140° E), Coll. Kavyamol P M, Light trap, 1♀, 19.ii.2020, Theneri, Wayanad district (11.6386° N; 76.1407° E), Coll. Kavyamol P M, Light trap.

Diagnosis: Measurements: TL: 6.37 mm; AL: 2.08 mm; HL: 0.908 mm; HW: 0.95 mm; PL: 0.91 mm; PW: 0.73 mm; EL: 1.3 mm; EW: 1.2 mm

Colour: Head black. Elytra blue. Last two abdominal segments black, thorax and first four visible segments red; antennae black, the first three segments slightly testaceous; palpi with the third joint black; legs black, the coxae and extreme base of the femora testaceous.

Head: Orbicular, the post-ocular region slightly rounded to the neck, a little broader than the thorax, with a few small setiferous punctures.



Fig. 1 *Paederus nigricornis*

Fig. 2 *Paederus extraneus*Fig. 3 *Paederus alternans*

Thorax: Convex, ovate and longer than broad, not much narrowed behind, smooth along the middle, the sides with fine setiferous punctures.

Elytra: Slightly broader and about a third longer than the thorax, parallel, rather finely and not very closely punctured having fine greyish semi-erect pubescence.

Abdomen: Finely and scarcely punctured, finely and sparingly pubescent with a few long black setae.

Distribution: India (Kerala: Wayanad; Ambalavayal, Theneri; Himalaya; Karnataka: Kanara; Tamil Nadu: Nilgiri Hills). Elsewhere: Sri Lanka (Colombo, Maskeliya); Myanmar (Kawkareik; Pegu, Annam, Tonkin); China (Guangxi, Hainan); Vietnam (Tonkin).

Remarks: First record of dermatitis causing *Paederus alternans* from Kerala.

#### ACKNOWLEDGEMENTS

Authors are thankful to the Principal, St. Joseph's College Devagiri for providing all the facilities needed for this study. The first (U. O. No. 5033/2018/Admn) and third author (U. O. No. 7010/2019/Admn) are thankful to the University of Calicut for the PhD registrations. Authors are grateful to Dr. Sabu K Thomas for the insightful comments and valuable instructions and to the Director, Regional Agriculture Research Station Ambalavayal for Collection permissions, and to Ashly Kurian, Divya M, Shighina K, Nijisha K, Neethu V P, Anagha V S and Aswathy S B, Department of Zoology, St.



Joseph's College Devagiri, for support. The first author is thankful to the State Government of Kerala for providing e-Grantz Scholarship.

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