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**NOTE**

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Poovoli Amina, K. Rajmohana & K.V. Bhavana

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# First record of *Speculitermes chadaensis* Chatterjee & Thapa, 1964 (Isoptera: Termitidae) from the Western Ghats, India

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Among arthropods, termites are the dominant decomposers and play an important role in recycling of nutrients. Termite activities of mound building, subterranean tunneling as well as soil and humus feeding improve the soil structure and quality (Lee & Wood 1971; Black & Okwakol 1997; Holt & Lepage 2000; Donovan et al. 2001). Despite being one of the hottest hotspots (Myers et al. 2000), the termite fauna of the Western Ghats is less studied. Recently, a few Sri Lankan endemic taxa of genus *Ceylonitermellus* Emerson (Amina & Rajmohana 2013) and species *Hospitalitermes monoceros* (König) (Amina et al. 2013) of Sri Lanka, were documented from the Western Ghats. Out of 290 species grouped under 54 genera reported so far from India (Krishna et al. 2013), only 122 species under 37 genera are reported from the Western Ghats (CES 2014).

As a part of our systematic studies on the termites of Kerala, we collected a colony of *Speculitermes chadaensis* Chatterjee & Thapa, 1964 which represents a first record of this species from the Western Ghats. Till date, the species has only been reported from Madhya Pradesh (Chatterjee & Thapa 1964). The current distribution of the species has been provided (Fig. 1). Furthermore, the mandibles of the worker caste (Image 2) of *S. chadaensis* are described for the first time.

The diversity of the termites of Western Ghats as well as that of Kerala are yet to be explored in detail. An extensive and intensive survey would surely document many more genera and species, also yielding further interesting and valuable information on the diversity and ecology regarding this highly important faunal group.

**Materials and Methods:** The collected specimens were preserved in 80% alcohol. Measurements were made in 80% alcohol under a stereo zoom microscope, Leica EZ4HD, at magnifications between 8-35X. The map was generated using the DIVA-GIS 7.5.0 Software.

The species identification was carried out using Chhotani (1997). The measurements were taken in accordance with Roonwal & Chhotani (1989) and Chhotani (1997). Studies on mandibular teeth follow Fontes (1987) and Gathorne-Hardy (2001). The specimens are deposited in the National Zoological Collections of the Zoological Survey of India (ZSI), at Kozhikode, Kerala, India.

Material examined: ZSI/WGRC/IR/INV/3441, 27.ii.2013, 7 workers, Malakappara, Thrissur, Kerala, India (evergreen forest, 10°16'40.8"N & 76°51'28.8"E, 948.7m), coll. Sureshan & party. ZSI/WGRC/IR/INV/3440, 25.ix.2013, 5 workers, Thirunelli, Wayanad, Kerala, India (semi-evergreen forest, 11°56'5.64"N & 76°01'4.41"E, 900m), coll. K.V. Bhavana.

Bioecology: They are humus/organic-rich soil feeders and soil dwellers. Being purely subterranean, they were

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**Conflict of Interest:** The authors declare no competing interests.

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found underneath boulders.

**Results and Discussions:** The termites belonging to *Speculitermes* Wasmann (Termitidae) are subterranean soil/humus feeders (Sornnuwat et al. 2003). In India, nine species of *Speculitermes* are found, of which six species have been reported so far from the Western Ghats. The genus belongs to the soldierless subfamily Apicotermitinae (Krishna et al. 2013), where the soldiers are very rare (Roonwal & Chhottani 1989) and are known only for a single species *Speculitermes sinhalensis* Roonwal & Sen-Sarma.

*S. chadaensis* was first described in 1964 by Chatterjee & Thapa from Karanjia forest, Madhya Pradesh. The soldier caste of the species *S. chadaensis* has never been collected and remains unknown. Hence their taxonomic identification depends exclusively on worker morphology.

***Speculitermes chadaensis* (Image 1)**

Chatterjee & Thapa, 1964: 514-516; Chhotani, 1997: 43-44

Head capsule dark brown; post-clypeus and labrum paler than head capsule; antennae pale brown; thorax and abdomen pale brown above and translucent. Head sparsely and body densely hairy. Total body length 4.50–6.10 mm.

Head capsule sub-circular (head length to tip of labrum 1.45–1.50 mm, head length to the base of mandibles 0.95–1.05 mm, maximum head width 1.20–1.30 mm). Epicranial suture faintly marked; mid-dorsal spot kite-shaped, slightly swollen and raised from head surface (0.12–0.17 mm diameter). Antennae 14 segmented; segments three subdivided and varying in length, slightly longer than or shorter than and sometimes sub-equal to 2; segment 4 sub-equal to 2 or shortest. Postclypeus swollen, length sub-equal to or a little more than half of width (0.27–0.33 mm in length, 0.55–0.58 mm in width). Mandibles with an apical and two marginal teeth (Image 2); apical tooth of left mandible finger like, sub-equal to or slightly shorter than first + second marginal; anterior margin of the first + second marginal tooth smaller than posterior margin; posterior margin long, sinuate; third marginal sharp, triangular, smaller than first marginal, separated by a deep cut; molar prominence short, longer than third marginal, not reaching up to first + second marginal. Right mandible with apical tooth sub-equal to first marginal; anterior margin of first marginal straight, posterior margin long; second marginal tooth slightly narrower, short and truncated; posterior margin long and slightly incurved; molar plate with apical thickening, concave, smooth and without ridges; cockroach notch


Image 1. *S. chadaensis*, worker in dorsal view


Image 2. Left and right mandible of *S. chadaensis* worker

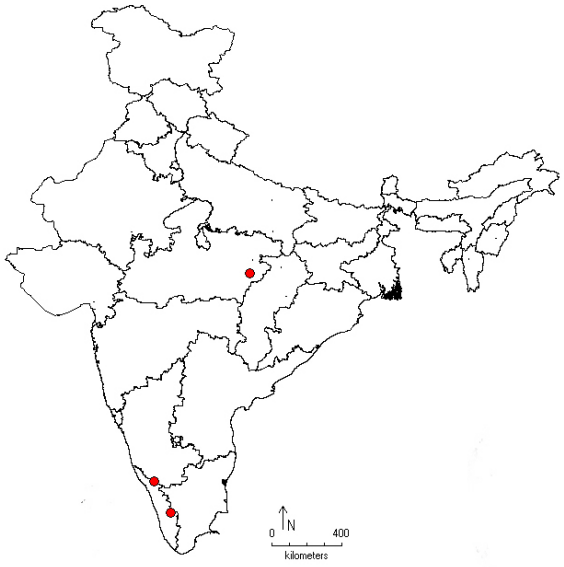


Figure 1. Distribution of *S. chadaensis*

present.

Pronotum saddle shaped (length 0.38–0.45 mm, width 0.67–0.75 mm); legs with 2:2:2 apical tibial spur; in fore-tibia dorsal spur sometime present but very minute; tarsi 4-segmented. Abdomen elongated, cerci 2-segmented.

## References


**Amina, P. & K. Rajmohana (2013).** First record of the genus *Ceylonitermellus* Emerson (Isoptera – Termitidae -Nasutitermitinae) in southern India based on a new mainland species from the Kerala ghats. *Colemania* 39: 1–10.

**Amina, P., K. Rajmohana, C. Bijoy, C. Radhakrishnan & N. Saha (2013).** First record of the Srilankan Processional Termite, *Hospitalitermes monoceros* (Konig) (Termitidae: Nasutitermitinae) from India. *Halteres* 4: 48–52.

**Black, H.I.J. & M.J.N. Okwakkol (1997).** Agricultural intensification, soil biodiversity and agroecosystem function in the tropics: the role of termites. *Applied Soil Ecology* 6: 37–53.

**CES (2014).** Sahyadri: Western Ghats Biodiversity Information System. http://wgbis.ces.iisc.ernet.in/biodiversity. Accessed on 26 June 2014.

**Chatterjee, P.N. & R.S. Thapa (1964).** *Speculitermes chadaensis* sp. n. from India (Isoptera: Termitidae: Amitermitinae). *Indian Forester* 90(8): 514–516.

**Chhotani, O.B. (1997).** *The Fauna of India and the Adjacent Countries. Isoptera (Termites): (Family Termitidae). Vol. 2*. Calcutta: Zoological Survey of India, xx+800pp.

**Donovan, S.E., P. Eggleton & D.E. Bignell (2001).** Gut content analysis and a new feeding group classification of termites. *Ecological Entomology* 26: 356–366.

**Fontes, L.R. (1987).** Morphology of the alate and worker mandibles of the soil-feeding nasute termites (Isoptera, Termitidae, Nasutitermitinae) from the Neotropical region. *Revista Brasileira de Zoologia* 3(8): 503–531.

**Gathorne-Hardy, F. (2001).** A review of the south-east Asian Nasutitermitinae (Isoptera: Termidae [sic]), with descriptions of one new genus and a new species and including a key to the genera. Journal of Natural History 35: 1485–1506; http://dx.doi.org/10.1080/00222930117067647

**Holt, J.A. & M. Lepage (2000).** Termites and soil properties, pp. 389–407. In: Abe, T., D.E. Bignell & M. Higashi (eds.). *Termites: Evolution, Sociality, Symbioses, Ecology*. Kluwer Academic Publishers, Dordrecht, xxii+466pp; http://dx.doi.org/10.1007/978-94-017-3233-9_18

**Krishna, K., D.A. Grimaldi, V. Krishna & M.S. Engel (2013).** "Treatise on the Isoptera of the world. Bulletin of the American Museum of Natural History, no. 377), date 25-04-2013, http://digitallibrary.amnh.org/handle/2246/6430

**Lee, K.E. & T.G. Wood (1971).** *Termites and Soils*. Academic Press, London x+251pp.

**Myers, N., R.A. Mittermeier, C.G. Mittermeier, G.A.B. da Fonseca & J. Kent (2000).** Biodiversity hotspots for conservation priorities. *Nature* 403: 853–858; http://dx.doi.org/10.1038/35002501

**Roonwal, M.L. & O.B. Chhotani (1989).** The fauna of India: Isoptera (termites) – vol. 1. Zoological Survey of India, viii+672pp.

**Sornnuwat, Y., K. Charoenkrung, S. Chutibhapakorn & C. Vongkaluang (2003).** Termite Survey in Secondary Dry Dipterocarp Forest at Srinakarin Dam National Park, Kanchanaburi Province, Western Thailand, pp. 517–522. In: Proceedings of The 2nd International Conference on Medicinal Mushroom and the International Conference Biodiversity and Bioactive Compounds. 17–19 July 2003, Pattaya, Thailand.

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