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Wallacea sp. (Coleoptera: Chrysomelidae) – A new spindle infesting leaf beetle on coconut palm in the Andaman and Nicobar Islands

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Worldwide 830 species of insects and mites live off the coconut palm (Kurian *et al.*, 1979). Of all these numerous and diverse insects, a few leaf beetles of the family Chrysomelidae such as *Brontispa longissima* Gestro and *Promecotheca cumingii* Baly are the most economically important insect enemies of the coconut palm globally and they pose threat of invasion into India. Mariau (2004) reviewed the biology of leaf beetles, numbering 79 species, infesting coconut and oil palms. Hispine cassidines are the major leaf beetles (59 species in 37 genera) on these palms and include the above mentioned invasive pests. *Callispa keram*, a minor pest in Kerala, is the only known hispine cassidine associated with coconut palm in India (Shameem and Prathapan, 2013).

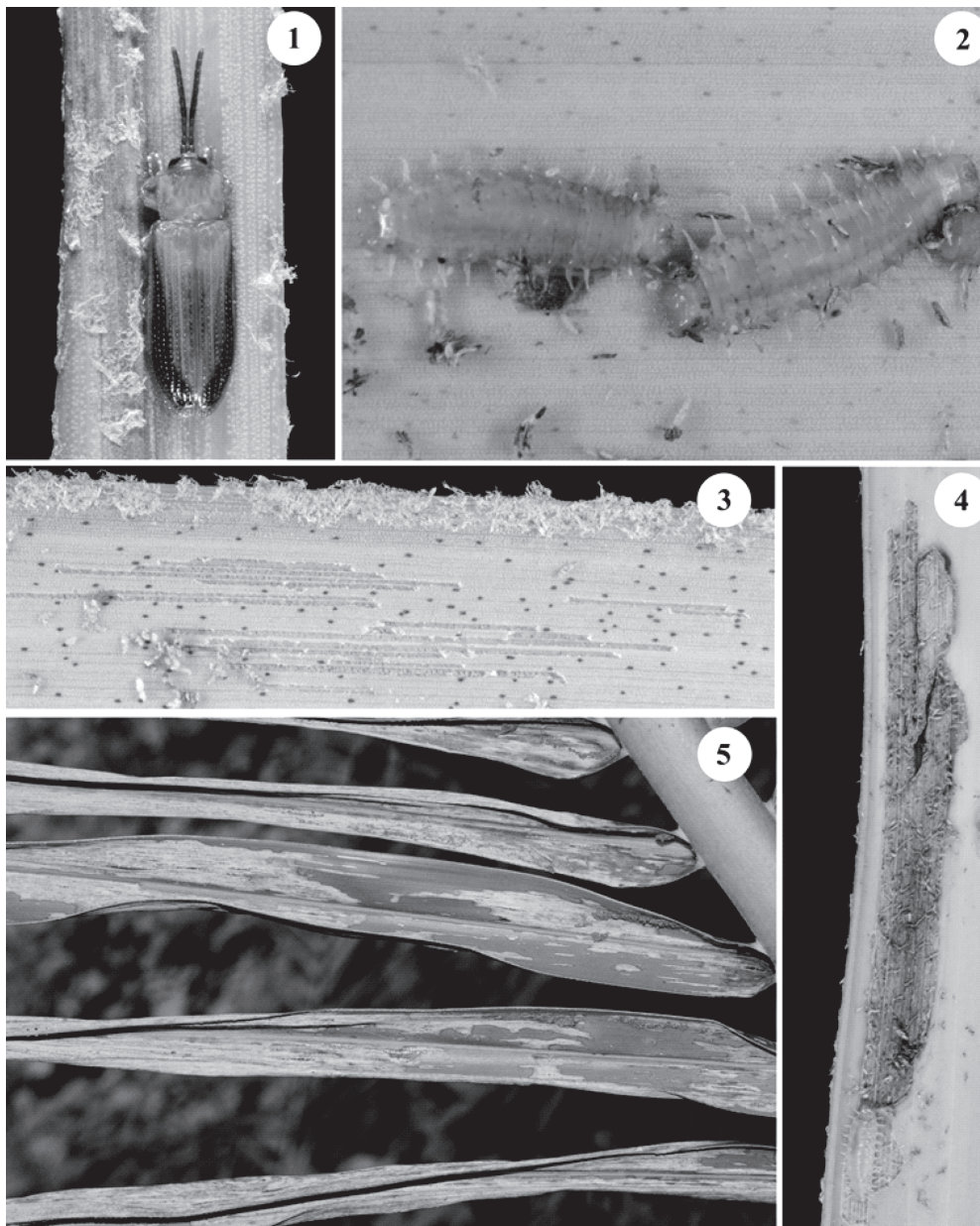
The genus *Wallacea* Baly (Chrysomelidae: Cassidinae: Gonophorini) comprises 33 named species, all native to the oriental region (Staines, 2012). *Wallacea testacea* (Fabricius), recorded as a native species of Australia, does not occur in that country and probably is native to Java. All known host plants of the genus are confined to the palm family Arecaceae (Staines, 2012). In India, *W. dactyliferae* Maulik and *W. limbata* Gestro represent the genus (Maulik, 1919).

An undescribed species of *Wallacea* has been found infesting spindle leaves of coconut palms in the Andaman and Nicobar Islands. Adults (Fig. 1) and larvae (Fig. 2) were collected from the Little

Andaman during April-May, 2014 and from South Andaman during April-May and August, 2014. Localities of collection include Chouldari (11°39'30.2"N; 92°40'22.7"E; 12 m above MSL), Mithakhari (11°39'22.7"N; 92°40'22.7"E; 27m), Obraganj (11°39'50.7"N; 92°39'24.1"E), Tushanabad (11°40'42.1"N; 92°38'25.2"E) and Manpur (11°40'46.9"N; 92°37'31.2"E) in the South Andaman and Hut Bay (10°43'5.8"N; 92°34'18.2"E; 27 m), and VK Pur 10°43'52.6"N; 92°34'5.7"E; 56 m) in the Little Andaman. A total of 92 adults were collected, mostly between the closely adhering abaxial surfaces of tender leaflets of the spindle. Adult is dorsoventrally flattened, 4.14 to 5.64 mm long and the colour is variable. Most specimens are entirely yellowish brown while some have a narrow lateral band on either side of elytra. The dark band widens posteriorly to cover the elytral apex, excluding the lateral and posterior margins. Colour of distal seven antennomeres too vary from light brown to nearly black. Early instar larva is creamy yellow and turns brown towards later instars. Egg and pupal stages remain elusive.

Both adults and larvae are adapted for life between the unopened and emerging tender leaves of the spindle. They scrape the green matter of the leaves. Adult feeding troughs appear like narrow lines (Fig. 3). Larval feeding troughs are irregular in outline, enclosing sclerenchymatous skeleton left after scraping of the green tissue (Fig. 4). Damaged

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Figs. 1. Adult; 2. larvae; 3. adult feeding troughs; 4. larval feeding troughs; 5. damaged leaflets on maturity.

leaves on unfurling and maturity bear numerous brown patches which often coalesce presenting blighted appearance (Fig. 5). Infestation results in reduction of photosynthetic area and thus debilitates the palms. Intensity of infestation was more in crowded and shaded plantations and the palms in open and well spaced gardens were generally free of the pest. *Wallacea* sp. was collected from seedlings and young palms in pre-bearing stage.

Adult palms could not be checked as the crowns were not easily accessible.

Mariau (2004) divided Hispini infesting palms into two ecological groups: those that browse on the foliage and live between the leaflets of unopened leaves; and the other one whose larvae mine a gallery in the lamina of opened leaves. *Brontispa longissima* and *Wallacea* sp. belong to the first ecological group, while *Promecotheca cumingii*

belongs to the second group. Kalshoven (1951) casually mentioned that *W. apicalis* (under the name *Wallaceana palmarum* Gestro) was also found on coconut palm in eastern Sumatra. However, coconut is not included amongst the host plants of *W. apicalis* in the revised and translated version of his work (Kalshoven, 1981). Moreover, there is no further confirmation of this record as neither Jolivet and Hawkeswood (1995), who reviewed the host plants of Chrysomelidae of the World, nor Mohammedsaid (2004), who studied leaf beetles of Malaysia, treat coconut palm as a host plant of this species. This is only confirmed report of the genus *Wallacea* on coconut palm.

No other chrysomelid is known to infest coconut palm in the Andaman and Nicobar Islands (Bhumannavar *et al.*, 1991). Nature of damage and the site of infestation make *Wallacea* sp. a potentially serious pest, as most insects attacking the spindle of the palm inflict considerable damage. Species of *Wallacea*, as the name alludes, are mostly Indo-Malayan. Since the fauna of the Andaman Islands has close affinities with that of the Indo-Malayan sub-region, it may be assumed that this undescribed species is native to the Islands and is kept under check by the native natural enemies. However, no natural enemies could be collected during the brief stint in the Islands. Accidental introduction and spread of this pest into the coconut growing regions of mainland India and elsewhere may lead to economic consequences. Hence, this warrants imposition of quarantine restrictions on the movement of live plant material, especially coconut seedlings, out of the Islands. The dead and preserved specimens are currently being held in the Travancore insect collection, Kerala Agricultural University, Vellayani, Trivandrum. More studies are underway and the species will be named and described elsewhere.

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