Short communication

First report of the occurrence of the arecanut spindle bug, *Mircarvalhoia arecae* (Miller & China) in the Andaman and Nicobar Islands

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Abstract

The arecanut spindle bug, *Mircarvalhoia arecae* (Miller & China) is reported from the Andaman and Nicobar Islands for the first time.

Keywords: Pest, India

The arecanut spindle bug, *Mircarvalhoia arecae* (Miller & China) (Heteroptera: Miridae) is considered as an endemic species of southern India. Its limited occurrence outside the centre of origin of the areca palm was explained in terms of the origin and evolution of the insect on the native rattan palm *Calamus travancoricus* Bedd. ex Becc. & Hook. f. and subsequent host shift and adaptation to introduced palms such as *Areca catechu* L., *Areca concinna* Thwaites, *Areca lutescens* Bory, *Areca triandra* Roxb. ex Buch.-Ham., *Chrysalidocarpus madagascariensis* Becc., *Elaeis guineensis* Jacq., *Loxococcus* sp. and *Pinanga* sp. (Shameem and Prathapan, 2014).

Arecanut palm, only next to coconut palm in importance, is a major cash crop of the Andaman and Nicobar Islands. Bhumannavar et al. (1991) recorded three species of Sternorrhyncha and a weevil as minor pests of arecanut palm in the Islands. During an insect collection trip to the Great Andaman Islands in April–May, 2014, severe infestation of the spindle bug, *Mircarvalhoia arecae* (Miller & China), was observed on arecanut palms of all ages at Sippighat and Mitha Khari in the South Andaman District and Diglipur in North Andaman. Both adults and nymphs were collected and typical damage symptoms were observed on the leaves. At Diglipur, *M. arecae* was also collected on an unidentified rattan palm (?*Calamus* sp.). In all, 18 adults were collected during 18–23rd April. Very low population of the pest, due to heavy rains, was observed during a subsequent trip to South Andaman during 8–13th October, 2014. Only a single adult and six nymphs were collected at Mitha Khari while four nymphs were observed at Calicut, all on areca palm and a single nymph on rattan palm at Tushanabad.

Mircarvalhoia arecae is widely distributed in Kerala (Nair and Das, 1962; Nair, 1963, 1964; Jacob, 1990; Dhileepan, 1991) and Karnataka (Khandige, 1955; Miller and China, 1956; Kantharaju et al., 2011; Yeshwanth, 2014). According to Kantharaju et al. (2011), Nair (1964) reported its occurrence in the adjoining areas of Tamil Nadu. However, there is no such mention in Nair (1964). This is the first confirmed report of the occurrence of *M. arecae* outside southern India. Distribution maps for *M. arecae* in southern India (Fig. 1) and the Andamans (Fig. 2) (prepared using the GIS software DIVA-GIS), are provided based on specimens in our

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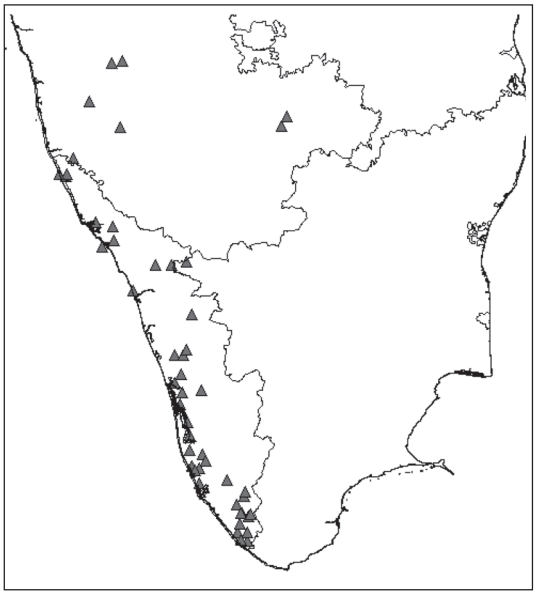

Figure1. Distribution of *Mircarvalhoia arecae* in southern India

Figure2. Distribution of *Mircarvalhoia arecae* in the Andaman Islands

collection as well as literature. Thakur et al. (2009, 2012) reported *M. arecae* from northeast India. However, the information provided by Thakur et al. (2009; pages 271-272), mostly verbatim from Atwal and Dhaliwal (2002; page 330), is not based on original observations. Our own efforts to collect the bug on arecanut and rattan palms in parts of Assam and Arunachal Pradesh too failed. Hence the reports by Thakur et al. (2009, 2012) are not included in the distribution map.

According to Rao (1982), the centre of origin of arecanut palm includes Cochinchina, Indonesia, Thailand, Malay peninsula and the neighboring islands. Discovery of *M. arecae* in the Andaman and Nicobar Islands, adjacent to this area, suggests the evolution of the insect with its hosts such as areca and rattan palms, in the Indo-Malayan sub-region itself and its subsequent spread to other areas of domestication of the arecanut palm. However, the possibility of its recent introduction into the Islands too cannot be ruled out.

Specimens of *M. arecae* are deposited in the Travancore Insect Collection, Kerala Agricultural University, Vellayani and the University of Agricultural Sciences, Bangalore.

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References

Atwal, A. S. and Dhaliwal, G. S. 2002. *Agricultural Pests of south Asia and their management* (4th ed.). Kalyani Publishers. Ludhiana, 498 p.

Bhumannavar, B. S., Mohanraj, P., Ranganath, H. R., Jacob, T. K. and Bandyopadhyay, A. K. 1991. Insects of Agricultural Importance in Andaman and Nicobar Islands. CARI Research Bulletin 6, Central Agricultural Research Institute. Port Blair, 49 p.

Dhileepan, K. 1991. Insects associated with oil palm in India. FAO Plant Protect. B., 39 (2-3): 94–99.

Jacob, S. A. 1990. Distribution of the spindle bug of

arecanut *Carvalhoia arecae* Miller and China in Kerala, its bioecology, suspected role as the vector of yellow leaf disease and control. Ph. D. Thesis, Kerala Agricultural University. Vellayani, 173+xv p.

Kantharaju, N., Thippeswamy, C., Siddalingappa, H. V. and Shivasharanappa, Y. 2011. Incidence of arecanut spindle bug, *Carvalhoia arecae* Miller and China (Heteroptera: Miridae). Environ. Ecol., 29 (1): 143-147.

Khandige, S.B. 1955. A capsid bug on areca. Arecanut Bulletin, 6: 120-121.

Miller, N.C. E. and China, W.E. 1956. A new genus and species of Miridae from *Areca catechu* in South India (Hemiptera:Heteroptera). Bull. Ent. Re., 47: 429-431.

Nair, M. R. G. K. 1963. *Carvalhoia arecae* Miller & China (Miridae : Hemiptera) as a pest of *Areca catechu*. Agric. Res. J. Kerala, 2(1): 53.

Nair, R. B. 1964. *Carvalhoia arecae* Miller and China - a major pest of *Areca catechu* L. Arecanut J., 15: 57-59.

Nair, M. R. G. K. and Das, N. M. 1962. On the biology and control of *Carvalhoia arecae* Miller and China (Miridae: Hemiptera), a pest of areca palms in Kerala. Indian J. Ent., 25: 86-93.

Rao, M. M. 1982. Introduction In: Bavappa, K. V. A., Nair, M. K. and Kumar, T. P. (eds.). The arecanut palm (*Areca catechu* Linn.), Central Plantation Crops Research Institute, Kasargod, Kerala, India, pp. 1-9.

Shameem, K. M. and Prathapan, K. D. 2014. Rattan cane *Calamus travancoricus* - a new host plant record for spindle bug of arecanut palm, *Mircarvalhoia arecae* (Miller & China). Indian J. Ent., 76(3): 252-253.

Thakur, A. N. S., Kalaisekar, A., Ngachan, S. V., Saikia, K., Rahman, Z. and Sarma, S. 2009. Insect pests of crops in North East India. ICAR Research Complex for NEH Region. Umiam, Meghalaya, India, 360 p.

Thakur, A. N. S., Firake, D. M., Behere, G. T., Firake, P. D. and Saikia, K. 2012. Biodiversity of agriculturally important insects in North Eastern Himalaya: an overview. Indian J. Hill Fmg., 25(2): 37-40.

Yeshwanth, H. M. 2014. Taxonomy of Mirid Bugs (Hemiptera: Miridae) of South India, Ph. D. Thesis, University of Agricultural Sciences. Bangalore, 169 p.