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New records of flat mites (Acari: Tenuipalpidae) from India

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Short note

ABSTRACT

Six species of Tenuipalpidae are reported for the first time from India among the seventeen species from South Bengal in the current collection. Among them, three species belong to the genus Brevipalpus, B. melichrus Pritchard and Baker, B. mitrofanovi (Pegazzano) and B. turrialbensis Manson; one species of the genus Cenopalpus, C. picitilis Chaudhri; and the remaining two species belong to the genus Tenuipalpus, T. crassulus Baker and Tuttle and T. leipoldtii Meyer.

Keywords Brevipalpus, Tenuipalpus, Cenopalpus, plant mite

Zoobank http://zoobank.org/F5BD89F1-2336-4659-9929-70B044B5B805

Introduction

The Tenuipalpidae (Acari: Prostigmata: Tetranychidae) commonly known as flat mites or false spider mites is cosmopolitan in distribution and economically very important pest species as they infest fruit trees, vegetables, crops, medicinal, ornamental and other economic plants and causes economic loss. More than 1100 species under 38 genera of flat mites are reported across the world (Beard et al., 2014). Presently 102 species under 15 genera are found in India as per latest record by Gupta and Mandal (2015). In present study we report seventeen tenuipalpid species from southern part of West Bengal of which six species are new to the Indian fauna.

Materials and methods

We conducted monthly field survey from 3 January 2015 to 29 December 2017 in various agri-horticultural crop fields, as well as forest and grassland of southern part of West Bengal, India. A total of 2762 leaf samples were brought to the laboratory and examined under a stereoscopic research microscope (Motic SMZ-168 Stereo Zoom Microscope). Mite specimens were temporarily preserved in 70% ethyl alcohol and were cleared in lactic acid (50%) for 24-48 hours then mounted on slides in Hoyer’s medium (Walter and Krantz, 2009) and slides were dried on a hot-plate at 40°C for further taxonomic identification. Mites were initially examined under Motic DM-B1 Digital Microscope. For further analysis and detailed characterization NIKON Eclipse 50i DIC microscope was used.

The specimens were identified using the key of Mitrofanov (1973 a, b); Meyer (1993); Beard et al. (2012, 2015); Gupta and Mandal (2015) and Welbourn et al. (2017). For the classification the catalogue of Mesa et al., (2009) and checklist of Khanjani et al., (2013) were consulted. The specimens are deposited in the National Zoological Collection of Zoological Survey of India, Kolkata.

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Results

Genus *Brevipalpus* Donnadieu

*Brevipalpus californicus* (Banks, 1904)


Distribution — California, India, Pakistan.

*Brevipalpus cucurbiteae* Mohanasundaram, 1982

Material examined — 3♀ and 1♂, Contai [21.7811°N, 87.7450°E], East Midnapore, West Bengal on *Cucurbita maxima* Duchesne, 12 March 2015, coll. Subhasree Mitra. 2♀ and 1♂, Arambag [22.8728°N, 87.7911°E], Hoogly, West Bengal on *Psidium guajava* L. 23 August 2015, coll. Subhasree Mitra.

Distribution — India.

*Brevipalpus essigi* Baker, 1949


Distribution — California, India, Mexico.

*Brevipalpus euphorbiae* Mohanasundaram, 1982

Material examined — 1♀ and 1♂, Baharampur [24.0988°N, 88.2679°E], Murshidabad, West Bengal on *Croton* sp., 22 January 2016, coll. Subhasree Mitra. 2♀ and 1♂, Birati [22.6636°N, 88.4273°E], North 24 Parganas, West Bengal on *Terminalia chebula* Retz. 20 August 2015, coll. Subhasree Mitra.

Distribution — India.

*Brevipalpus lewisi* McGregor, 1949


Distribution — California, India, Pakistan.

*Brevipalpus melichrus* Pritchard & Baker, 1952


Distribution — California, India.

Remarks — New record from India.
**Brevipalpus mitrofanovi** (Pegazzano, 1975)

Material examined — 6♀ and 1♂, Raidighi [22.0012°N, 88.4354°E], South 24 Parganas, West Bengal on *Rosa chinensis* Jacq. 8 June 2016, coll. Subhasree Mitra. 2♀ and 2♂, Kalipakpur [22.5009°N, 88.3949°E], South 24 Parganas, West Bengal on *Citrus aurantiifolia* (Christm.) Swingle 11 April 2016, coll. Subhasree Mitra.

Distribution — India, Italy.

Remarks — New record from India.

**Brevipalpus obovatus** Donnadieu, 1875


Distribution — Cosmopolitan.

**Brevipalpus phoenicis** Geijskes, 1939


Distribution — Cosmopolitan.

**Brevipalpus rica** Chaudhri, 1972


Distribution — India, Pakistan.

**Brevipalpus turrialbensis** Manson, 1963


Distribution — Costa Rica, India.

Remarks — New record from India.
**Genus Cenopalpus Pritchard & Baker**

*Cenopalpus picitilis* (Chaudhri, 1971)


**Distribution** — Pakistan, India.

**Remarks** — New record from India.

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**Genus Tenuipalpus Donnadieu**

*Tenuipalpus bassae* Mohanasundaram, 1988

**Material examined** — 3♀ and 1♂, Narendrapur [22.4391°N, 88.3968°E], South 24 Parganas, West Bengal on *Hibiscus rosa-sinensis* L. 13 February 2016, coll. Subhasree Mitra.

**Distribution** — India.

*Tenuipalpus crassulus* Baker and Tuttle, 1972

**Material examined** — 4♀ and 1♂, Barasat [22.7228°N, 88.4806°E], North 24 Parganas, West Bengal on *Hibiscus rosa-sinensis* L. 11 July 2016, coll. Subhasree Mitra. 3♀ and 1♂, Dumdum [22.6471°N, 88.4317°E], Kolkata, West Bengal on *Aegle marmelos* (L.) Corrêa 24 March 2017, coll. Subhasree Mitra.

**Distribution** — Guatemala, India, Netherland, Washington.

**Remarks** — New record from India.

*Tenuipalpus crassus* Andre, 1953


**Distribution** — France, India.

*Tenuipalpus leipoldti* Meyer, 1993


**Distribution** — India, South Africa.

**Remarks** — New record from India.

*Tenuipalpus leptadeniae* Mohanasundaram, 1995


**Distribution** — India.

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