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Two new records of spider mites (Acari: Tetranychidae) with new host plant from Coimbatore district, Tamil Nadu, India

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This survey was made during 2019–2020 in Coimbatore region of Tamil Nadu. Mites infesting plant samples were collected with aid of hand lens in individual polythene bags, labeled appropriately with the details of host plant, location and symptoms of attack. 20–30 mites of both adult female and males were preserved in 70% ethyl alcohol taken in 1.5 ml Eppendorf tubes for slide preparation. The specimens were mounted in Hoyer's medium and dried in an oven for a week. The mites were identified under Leica DM750 (Leica DFC295 camera). All species samples were deposited in Biosystematics division in Department of Agricultural Entomology, Tamil Nadu Agricultural University as a type depository in Coimbatore, India. Nine species of spider mites were collected in different agro-ecosystems (Table 1) from which five species were found to be new records to the region, with new host plant reports for the world:

Family Tetranychidae Donnadieu 1875
Genus *Tetranychus* Dufour 1832

T. udaipurensis Gupta & Gupta, 1994

Geographical distribution – *Tetranychus udaipurensis* was recorded as a new species from Rajastan on *Solanum melongena* (Solanaceae) (Gupta and Gupta 1994). *Diplocyclos palmatus* (Cucurbitaceae) and *Asystasia gangetica* (Acanthaceae) were recorded as host for this mite from Karnataka (Zeity 2015).

Material examined – 2♂ and 2♀, TNAU 0070-0074, 24.i.2020 ex. *Lablab purpureus* L. (Fabaceae), Alanthurai; 5♂ and 7♀, TNAU 0075-0086, 7.iii.2020 on *Ricinus* sp. L. (Euphorbiaceae) from Periyanaickenpalayam; 4♂ and 16♀, TNAU 0087-0106, 19.x.2019 on *Moringa* sp. L. (Moringaceae) from TNAU- Orchard.

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New host plant – *Lablab purpureus*, *Ricinus* sp. and *Moringa* sp.

Remarks – This species is collected from various crop plants. As range of its host plants is increased and spread from North India to South India over a period of time this mite species may be a future threat.

Table 1. Tetranychid mites from Coimbatore region Tamil Nadu, India (Sl. No., Slide number).

Sl. No.	Species	Location	GPS (N-E)	Date of Collection	Host plant
1.	*Tetranychus urticae*	Theethipalayam	10° 97'-76° 89'	13.03.2020	*Solanum lycopersicum*
2.	*T. urticae*	Theethipalayam	10° 97'-76° 85'	13.03.2020	*Tridax procumbens*
3.	*T. urticae*	Theethipalayam	10° 95'-76° 89'	13.03.2020	*Parthenium hysterophorus*
4.	*T. urticae*	Narasipuram	10° 98'-76° 77'	23.09.2019	*Polianthes tuberosa*
5.	*T. urticae*	Sulur	11° 09'-77° 12'	23.09.2019	*Jasminum sambac*
6.	*T. urticae*	Sulur	11° 09'-77° 12'	23.09.2019	*Manihot esculenta*
7.	*T. macfarlanei*	Kinathukadavu	10° 82'-77° 01'	03.03.2020	*Abelmoschus esculentus*
8.	*T. macfarlanei*	Annur	11° 23'-77° 11'	01.01.2020	*Lagenaria siceraria*
9.	*T. macfarlanei*	Madukkarai	10° 89'-76° 94'	08.08.2019	*Cucumis sativus*
10.	*T. macfarlanei*	TNAU-Insectary	11° 01'-76° 92'	23.11.2019	*Lablab pururеus*
11.	*T. macfarlanei*	Pappampatti	10° 95'-77° 01'	07.03.2020	*Solanum melongena*
12.	*T. udaipurensis*	Alanthurai	10° 95'-76° 71'	01.01.2020	*Lablab pururеus*
13.	*T. udaipurensis*	Periyanaickenpalay	11° 14'-76° 94'	07.03.2020	*Ricinus communis*
14.	*T. udaipurensis*	TNAU- Orchard	11° 00'-76° 93'	19.10.2019	*Moringa oleifera*
15.	*Oligonychus stylus*	TNAU- Botanical	11° 01'-76° 93'	27.02.2020	*Cocos nucifera*
16.	*O. grypus*	TNAU- PBS	11° 00'-76° 91'	17.02.2020	*Oryza sativa*
17.	*Schizotetranychus baltazari*	Thondamuthur	10° 98'-76° 83'	07.02.2020	*Citrus aurantiifolia*
18.	*S. baltazari*	TNAU- PBS	11° 00'-76° 91'	07.02.2020	*Murraya koenigii*
19.	*S. baltazari*	TNAU- Play	11° 00'-76° 93'	07.02.2020	*Azadiracta indica*
20.	*S. lespedezae*	TNAU-Insectary	11° 01'-76° 92'	07.10.2020	*Bauhinia purpurea*
21.	*S. krugnthepensis*	SBI-Coimbatore	11° 00'-76° 91'	08.08.2019	*Saccharum officinarum*
22.	*Eutetranychus orientalis*	TNAU-Campus	11° 02'-76° 92'	09.03.2020	*Azadiracta indica*
23.	*E. orientalis*	Theethipalayam	10° 95'-76° 89'	14.03.2020	*Cocos nucifera*
24.	*E. orientalis*	TNAU- PG hostel	11° 02'-76° 92'	26.02.2020	*Nerium oleander*

Genus *Oligonychus* Berlese 1886

O. tylus Baker & Pritchard, 1960

Geographical distribution – Two males and six females were found on *Panicum maximum* (Poaceae) in Réduit, Mauritius in January 1955 (Baker and Pritchard 1960). *Zea mays* (Poaceae), *Musa sapientum* (Musaceae), *Areca catechu* (Arecaceae) and *Brachiaria mutica* (Poaceae) in Karnataka regions (Zeity 2015).

Material examined – 2♂ and 3♀, TNAU 0107-0112, 27.ii. 2020 on *Cocos nucifera* from TNAU- Botanical garden.

New host plant – *Cocos nucifera* (Arecaceae)

Remarks – *Oligonychus tylus* infestation and considerable loss in date palm nuts by shriveling and drying was observed in town of Elat (Gerson *et al.* 1983). The aedeagus of this species is similar to *O. modestus* (Banks) in having small distal enlargements. However, knob of aedeagus is without distinct anterior angulations in *O. tylus*. This is a new host record for *O. tylus*.

Genus *Schizotetranychus* Tragardh 1915

S. baltazari Rimando, 1962

Geographical distribution – This species was first reported by Rimando (1962) in citrus (Rutaceae) from Philippines, later it was reported in Hong Kong, Myanmar and India on citrus (Manson 1963); on *Lansium domesticum* (Meliaceae) in Taiwan (Lo 1968), Thailand (Ehara and Wongsiri 1975), and Indonesia (Ehara 2004); on *Mallotus japonicus* (Euphorbiaceae) in Japan (Kazunori Ohashi *et al.* 2009), and in *Dioscorea* sp. (Dioscoreaceae) from Thailand (Ehara and Wongsiri 1975). In India reported in citrus spp., *Murraya koenigii* (Rutaceae) and *Azadirachta indica* (Meliaceae) (Manson 1967; Prasad 1974; Gupta 1991; Gupta and Gupta 1994).

Material examined – 3 ♂ and 3 ♀, Thondamuthur, Coimbatore, TNAU 0127-0132, 7.ii.2020 on *Citrus aurantiifolia* (Christm.); 3 ♀ and 4 ♂, Theethipalayam, Coimbatore, TNAU 0133- 0140, 17.ii.2020 on *Citrus aurantiifolia*; 3♂ and 5♀, Paddy Breeding Station, Coimbatore, TNAU 0141-0148, 7.ii.2020 on *Murray koenigii* (L.) ; 2♂ and3♀, TNAU, University, Playground, Coimbatore, TNAU 0149- 0153, 7.ii.2020 on *Azadiracta indica* A. Juss.

Remarks – Mite infests both leaves and fruit in case of citrus, in neem and curry leaves. Young female lays eggs underneath web silks to protect progenies from predators and abiotic stress. They feed below web and these spots are visible like white or silvery spots. Shape of aedeagus of *S. baltazari* resembles *S. hindustanicus* (Hirst, 1924). It only differs from the latter in absence of posterior extension of aedeagal knob. Both mites are reported from citrus (Navia and Marsaro Jr 2010). This mite is a threat in curry leaves and citrus; it greatly reduces the quality of leaves and yield respectively and imposes huge financial burden in form of management practices on farmers.

S. lespedezae Beglyarov & Mitrofanov, 1973

Syn.: *Schizotetranychus leguminosus* Ehara, in: Mitrofanov *et al.* (1987), p. 103.

Geographical distribution – This species is recorded from *Pueraria montana* (Fabaceae) and *Wisteria floribunda* (Fabaceae) in Japan (Ehara 1973; Gotoh *et al.* 2003; Matsuda *et al.* 2014); on *Lespedeza bicolor* (Fabaceae), *Lespedeza* sp. (Fabaceae) and *Maackia amurensis* (Fabaceae) from Russia (Beglyarov and Mitrofanov 1973; Ehara 1973). In India it is reported in Karnataka on *Bauhinia purpurea* (Fabaceae), *Gliricidia* sp. (Fabaceae), *Pongamia* sp. (Fabaceae) and *Cajanus cajan* (Fabaceae) (Zeity *et al.* 2016).

Material examined – 2♂ and 3♀, Insectary, TNAU- Coimbatore, TNAU 0150- 0154, 7.x.2020 and 3♀ and 3♂, Paddy Breeding Station, TNAU Coimbatore, TNAU 0155-0161, 17.ii.2020 on *Bauhinia purpurea.*

Remarks – Mites infest undersurface of leaves by making small colonies of silken web. They feed from underneath web and these white spots are clearly visible. Later, due to severe infestation leaves turns yellow and feather off. This species was recorded first time in Tamil Nadu and host range is shown to be restricted to Fabaceae plants.

S. krungthepensis Auger & Naing, 2014

Geographical distribution – It was recorded from *Saccharum officinarum* (Poaceae) from Thailand as a new species (Naing *et al.* 2014). Also, it is reported from some parts of India during

2015–2020 from All India Network Project on Agril. Acarology, Network unit at Bangalore and other centers from different states: **Tamil Nadu:** Coimbatore (SBI); Villupurum; Satyamangalam, Karur, Cuddalore, Kattur; **Kerala:** Kannur, Agali; **Punjab:** Ludhiana, Fazilka, Faridkot, Sangrur; **West Bengal:** Kalyani; **Gujrat:** Navsari; **Karnataka:** Mandya.

Material examined – 2♂ and 3♀, Sugarcane Breeding Institute (SBI), Coimbatore, TNAU 0179-0184, 08.viii.2019 from *Saccharum officinarum*.

Remarks – Mites colonies are seen undersurface of leaves within silken webs. This species is considered to be a future threat in sugarcane production in India; its invasive entry remains uncertain.

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