THE FAMILY TENUIPALPIDAE IN BERMUDA (PROSTIGMATA: ACARI)

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ABSTRACT

Four new host plant records and five new distribution records are reported for tenuipalpid mites collected in a survey of the phytophagous mites of Bermuda. A taxonomic key to the five tenuipalpid species and a host plant list are provided.

Key Words: phytophagous mites, tenuipalpid, flat mites, false spider mites, Bermuda, Neotropics

RESUMEN

Se reportan cuatro hospederos nuevos y cinco localidades nuevas para ácaros tenuipálpidos recolectados en Bermuda. Se incluyen una clave de identificación para las cinco especies de tenuipálpidos y una lista de las plantas hospederas.

Bermuda is a small archipelago in the North Atlantic Ocean with seven main islands comprising a total land area of 54 km^2. The climate is subtropical and frost-free, but the terrestrial fauna is depauperate due to the extreme isolation of the islands and their geologically young age. Hillburn & Gordon (1989) provided a review of entomology in Bermuda and an introduction to the insect survey initiated in 1987. In December, 1989 and May, 1990, Dr. H. L. Cromroy of the University of Florida traveled to Bermuda to conduct a survey of the phytophagous mites of the island in cooperation with senior plant quarantine officer K. D. Monkman. Financial support was provided by the Department of Agriculture, Fisheries and Parks, Hamilton, Bermuda to conduct the study. Collections were made all over the islands from as many different plants as possible including ornamentals, cultivated crops and weeds. This survey could then serve as a basis for the quarantine of specific plant mites which do not occur on the island.

The following is a report of the species of the family Tenuipalpidae, commonly called false spider mites or flat mites, collected in the survey. No previous records exist of tenuipalpids collected in Bermuda. Setal nomenclature, sculpture terminology and species groups follows that used by Baker & Tuttle (1987). The names and abbreviations used for the various nymphal forms of *Brevipalpus phoenicis* are given and illustrated in Evans et al. (1993). An asterisk is used to indicate new host and distribution records. All of the collections of tenuipalpids from Bermuda were made by H. L. Cromroy and K. Monkman, unless otherwise noted.

KEY TO THE TENUIPALPIDAE OF BERMUDA

1. Dorsosublateral hysterosomal setae present, palpus 5-segmented. . . . . Genus *Aegyptobia* Sayed

One species in genus known to occur in Bermuda having uncinate claws, deeply emarginated rostral shield, long serrate dorsolateral hysterosomal setae and elongate areolae on the dorsocentral region of the propodosoma and hysterosoma. . . . . *A. nothus* Pritchard and Baker

- Dorsosublateral hysterosomal setae absent, palpus 4-segmented . . . . . Genus *Brevipalpus* 2

2. Hysterosoma with 6 pairs of lateral setae 3
- Hysterosoma with 7 pairs of lateral setae, 2 solenidia on tarsus II (*californicus* Group), one species in this group known to occur in Bermuda having the dorsocentral and dorsomedial regions areolate, intercoxal area smooth, dorsal setae on femora I and II broad and leaf-like. Nymph with all dorsal idiosomal setae broadly leaf-like . . . . . *B. viquierae* BTA

3. Tarsus II with 1 solenidion (*obovatus* Group), one species in this group known to occur in Bermuda with broad dorsum, areolate dorsomedial region and rugose lateral region, propodosomal setae short and sublanceolate, similar in size and form as the dorsolateral hysterosomal setae . . . . . *B. obovatus* Donnadieu
- Tarsus II with 2 solenidia (*phoenicis* Group) 4

4. Palpfemur seta broad and leaf-like, intercoxal area reticulate . . . . . *B. hondurani* Evans
- Palpfemur seta lanceolate, intercoxal area punctate . . . . . *B. phoenicis* (Geijskes)

Genus Aegyptobia Sayed
Aegyptobia nothus Pritchard and Baker

Aegyptobia nothus Pritchard and Baker 1958:180.

TYPE: Holotype female, ex. *Juniperus* sp., Oklahoma City, Oklahoma, USA, 18.vii.1953, by A.E. Pritchard, in the U. S. National Museum USNM).

HOSTS: *Juniperus* sp., **Juniperus chinensis*, **Platycladus orientalis*, *Quercus* sp., *Taxodium disticus*.

DISTRIBUTION: *Bermuda and USA: Florida, North Carolina, Oklahoma.

SPECIMENS EXAMINED: Female, ex. *Juniperus chinensis*, Bermuda, Paget Parish, 1.5 miles SE of Hamilton, Bermuda Botanical Gardens, 11.xii.1989; ex. *Platycladus orientalis*, Bermuda, Paget Parish, 1.5 miles SE of Hamilton, Bermuda Botanical Gardens, 11.xii.1989.

Genus *Brevipalpus* Donnadieu
Brevipalpus hondurani Evans

Brevipalpus hondurani Evans; Evans, Cromroy and Ochoa 1993:141.

TYPE: Holotype female, ex. *Heterocentron subtriplinervium*, Honduras, Parque La Tigra, 16.xii.1987, G. A. Evans, in USNM.

HOSTS: *Chamaedorea* sp., **Eriobotrya japonica*, **Eupatorium capillifolium*, *Heterocentron subtriplinervium*, *Hydrocotyle mexicana*, *Passiflora bicolor.*

DISTRIBUTION: *Bermuda and Honduras.

SPECIMENS EXAMINED: ex. *Eriobotrya japonica*, Bermuda, Lindley, Warwick, 9.v.1990.; ex. *Eupatorium capillifolium*, Bermuda, Devonshire, 12.xii.1989.

COMMENTS: Fungal spores were observed attached to mites in both of these collections.

Brevipalpus phoenicis (Geijskes)

Brevipalpus phoenicis (Geijskes) 1939:4

TYPE: Holotype female, in the Laboratorium voor Entomologie, Landbouwhoogeschool, Wageningen, Netherlands.

HOSTS: Many hosts including hundreds of ornamental and fruit species.

DISTRIBUTION: *Bermuda, Worldwide.

SPECIMENS EXAMINED: ex. *Buddleia* sp., Bermuda, Warwick, Olive Bank 11.xii.1989 (typical nymph form); ex. *Citharexylum spinosum* L., 11.xii.1989; and 12.xii.1990, by K. Monkman; ex. *Ipomoea* sp., Bermuda, Warwick, Olive Bank, 12.xii.1989; *Ipomoea* sp. (morningglory), Bermuda, Vassey Street, 9.v.1990; ex. *Myrica cerifera*, Bermuda, Devonshire, Vassey Street, 9.v.1990 (typical nymph form); ex. *Pittosporum* sp., Bermuda, Paget Parish, Marsh, 7. v.1990, fungal spores found on mite; Bermuda, Paget Parish, 1.5 SE Hamilton, Bermuda Botanical Gardens, 11.xii.1989; ex. *Quisqualis indica* (Rangoon creeper), Bermuda, Paget Parish, 1.5 miles SE Hamilton, Bermuda Botanical Gardens, 15.xii.1989; ex. weed, Bermuda, Devonshire, Vassey Street, 12.xii.1989, (ab-type nymph); ex. weed, Bermuda, Devonshire, Vassey Street, 9.vi.1990.

Brevipalpus obovatus Donnadieu

Brevipalpus obovatus Donnadieu 1875:116.

HOSTS: Many hosts including hundreds of ornamental and fruit species.

DISTRIBUTION: *Bermuda, Worldwide.

SPECIMENS EXAMINED: ex. *Ipomoea batatas*, Bermuda, Devonshire, Brighton Hill, 12.xii.1989.

Brevipalpus viquierae Baker, Tuttle and Abbatiello

Brevipalpus viquierae Baker, Tuttle and Abbatiello 1975:16.

LECTOTYPE: ex. *Viquiera* sp., Mexico, Los Mochis, Sinaloa, 23.vii. 1970, by Tuttle, Abbatiello and Baker.

HOST: *Viquiera* sp.

DISTRIBUTION: *Bermuda, Honduras and Mexico.

SPECIMENS EXAMINED: ex. undetermined plant, Bermuda, Paget Parish, Marsh, 7.v.1990, nymph with fungal spores attached.

Discussion

Species of the genus *Brevipalpus* may play an important role in the dissemination and development of phytoparasitic and saprophytic fungal spores especially in the tropics. In our study, we found fungal spores attached to *Brevipalpus hondurani* and *B. viquierae*. Further studies are needed to determine the role these mites play in the dissemination of various fungi.

Host Plant List for Bermudan Tenuipalpids

Buddleia sp. . . . . *Brevipalpus phoenicis*
Citharexylum spinosum L. . . . . *Brevipalpus phoenicis*
Eriobotrya japonica (Thunb.) . . . . . *Brevipalpus hondurani*
Eupatorium capillifolium . . . . . *Brevipalpus hondurani*
Ipomoea batatas L. . . . . *Brevipalpus obovatus*
Ipomoea sp. . . . . *Brevipalpus phoenicis*
Juniperus chinensis L. . . . . *Aegyptobia nothus*

Myrica cerifera L. . . . . *Brevipalpus phoenicis*
Pittosporum sp. . . . . *Brevipalpus phoenicis*
Platycladus orientalis (L.) . . . . . *Aegyptobia nothus*
Quisqualis indica L. . . . . *Brevipalpus phoenicis*

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