Whiteflies (Sternorrhyncha, Aleyrodidae) colonising ferns (Pteridophyta: Filicopsida), with descriptions of two new *Trialeurodes* and one new *Metabemisia* species from south-east Asia

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**Abstract**

Three new whitefly species, *Trialeurodes rex* Martin sp. nov., *T. bruneiensis* Martin sp. nov. and *Metabemisia palawana* Martin sp. nov. are described from fern hosts in Sulawesi, Borneo and Palawan, respectively. An annotated check list of whiteflies feeding on pteridophyte hosts worldwide is presented, including host records and geographical distribution. A table is presented, comparing the names of fern hosts from literature with their current status.

**Key words:** whiteflies, new species, check list, ferns, worldwide, puparia.

**Introduction**

Few present day whitefly species are known to colonise the so-called lower vascular plants, the Pteridophyta. The oldest known Aleyrodoidea in the fossil record are from the late Jurassic (140+ million years ago) (Shcherbakov 2000). This was a time when the world’s vegetation largely comprised woody gymnosperms and herbaceous pteridophytes, but beyond this there is no evidence of the host association of these ancient whiteflies. The earliest Lower Cretaceous floras (Neocomian) were still entirely without members of the Angiospermae (flowering plants, the major component of the Spermatophyta today) but by the Barremian-Aptian Stage, at lower latitudes, they were already undergoing significant diversification (Wing & Sues 1992). This is at variance with Schlee’s (1970) statement that Lower Cretaceous aleyrodids lived “long before the development of the angiosperms”. However, it is true that it was not until the early part of the Late Cretaceous that the angiosperms underwent their greatest diversification, with up to 80% of some fossil
Gennadius, P. (1889) [Disease of tobacco plantations in the Trikonia. The aleurodid of tobacco.] [In Greek]. *Ellenike Georgia*, 5, 1-3.


Shcherbakov, D.E. (2000) The most primitive whiteflies (Hemiptera; Aleyrodidae; Bernaecinae sub-

fam. nov.) from the Mesozoic of Asia and Burmese amber, with an overview of Burmese


Schlee, D. (1970) Verwandtschaftsforschung an fossilen und rezenten Aleyrodina (Insecta, Hem-

iptera). *Stuttgarter Beiträge zur Naturkunde aus dem Staatlichen Museum für Naturkunde in

Stuttgart*, 213, 1-72.


Takahashi, R. (1960) Three species of Aleyrodidae from Réunion Island (Homoptera). *Naturaliste

Malgache*, 12, 139-143.


*Proceedings of the Royal Entomological Society of London (B)*, 31, 100-102.


Trehan, K.N. (1938) Two new species of Aleurodidae found on ferns in greenhouses in Britain


rensmeyer, A.K., Damuth, J.D., DiMichele, W.A., Potts, R., Sues, H.-D. & Wing, S.L. (Eds)

*Terrestrial Ecosystems through Time - Evolutionary Palaeoecology of Terrestrial Plants and


Visnya, A. (1941) Vorarbeiten zur Kenntnis der Aleurodiden-fauna von Ungarn , nebst systematis-

chen Bemerkungen über die Gattungen *Aleurochiton*, *Pealius* und *Bemisia* (Homoptera). *Frag-

menta Faunistica Hungarica*, 4 (Supplement), 1-19.