Factsheet *Trirhithrum coffeae* Bezzi

Original name: *Trirhithrum nigerrimum* var*. coffeae* Bezzi, 1918: 241.

Vernacular name: none

Formal redescription (after White et al., 2003)

Wing length=2.6-3.8 mm; Aculeus length0.70-0.82 mm.
Male
Head: Arista long plumose. Two pairs frontal setae. Face mostly white.
Thorax: Postpronotal lobe entirely dark or sometimes with a narrow pale margin. Scutum without silvery-white microtrichose areas. Scutellum disk dark; margin with baso-lateral pale areas (normally streaks); spots adjacent to bases of apical setae. Anepisternum largely dark but sometimes with a very narrow pale line across dorsal margin; usually with one seta (a single specimen with two has been examined). Anatergite without a bright silvery spot.
Wing: Pattern diffuse, especially in costal region; banding pattern not distinct. Cell c largely hyaline. With a distinct dark mark on C at/before end of Sc and with a contrastingly dark area near base of cells cu_1; pterostigma not markedly darker than rest of pattern. Anal lobe largely hyaline or coloured but with a hyaline indentation. No bulla.
Legs: Femora dark.
Abdomen: With distinct grey microtrichose stripes. Terminalia: Similar to *T. psychotriae* White.

Female
Head, thorax, legs & abdomen: As in male. Wing pattern distinct. Subbasal and discal crossbands not fully separated posterior to Rs and cell c extensively hyaline; cell bc with dark area extended well into basal half of cell; a distinct dark mark on C at/before end of Sc; pterostigma not markedly darker than rest of pattern; basal area of cell r_1 immediately above vein R_{2+3}/R_{4+5} bifurcation with a dark spot that is at most narrowly connected to large dark area of cell r_1; discal crossband distally aligned with a point within pterostigma and R-M crossvein within discal crossband; often somewhat darkened in cell cu_1. Subapical crossband usually joined to discal crossband (rarely slightly separated); base narrow, usually largely or entirely confined to cell r_{4+5}. Posterior apical crossband reduced to a short spur. Anal lobe coloured but with a hyaline indentation (ending before or only slightly anterior to vein A_1+Cu_2). No bulla. Terminalia: Aculeus short, stout and pointed (appears asymmetric under a coverslip; dorsal view apparently similar to *T. leonense*; spermatheca curved and bulbous (similar to *T. occipitale*).

Encyclopedia of Life link: http://eol.org/pages/727719/overview

DNA barcoding

Multiple reference DNA barcodes from the species distribution are available on the Barcode of Life Data Systems (BOLD) at:

http://www.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxon=Trirhithrum+coffeae&searchTax=

In BOLD (March 2017), *T. coffeae* only forms monospecific BINs. For this reason, DNA barcoding might be considered as a suitable tool for the molecular identification of this species.

Host plant list

One of the main fruit fly pests found on coffee, both robusta as arabica. Some of the non *Coffea* records are doubtful and need confirmation. Throughout its range it is recorded from the hosts listed in the table below.

PlantFamily	PlantLatinName	PlantCommonNameEnglish
Myrtaceae	Eugenia uniflora	surinam cherry, pitanga cherry
Ochnaceae	Ouratea sacleuxii	
Rubiaceae	Coffea arabica	arabica coffee
Rubiaceae	Coffea canephora	robusta coffee
Rubiaceae	Coffea eugenioides	
Rubiaceae	Coffea liberica	
Rubiaceae	Coffea sp.	coffee
Sterculiaceae	Cola sp.	

Additional information on host records and associated specimens can be found on :
http://projects.bebif.be/fruitfly/taxoninfo.html?id=122

Impact & management

Details on losses incurred by *Trirhithrum coffeae* on commercial crops are largely lacking. Only Greathead (1972) gives information on relative abundance on robusta and arabica coffee in Uganda according to White & Elson-Harris (1994).

Management for this species is, as for most fruit fly pests, most efficient using an IPM (Integrated Pest Management) program, including aspects such as orchard sanitation, bait sprays, mass trapping among others. General reviews on the current IPM components applied in Africa can be found in chapters 13 to 20 of Ekesi et al. (2016).

No SIT (Sterile Insect Technique) application specifically for this species has been developed in Africa.

Attractants & trapping

Both sexes can be attracted by protein bait products such as liquid protein baits and three component Biolure.

There are no specific male attractants known.

General information on trapping, types of traps, lures and required density of trapping stations can be found in IAEA (2013), Shelly et al. (2014), and Manrakhan (2016).

Distribution

Trirhithrum coffeae is found in western, central and eastern Sub-Saharan Africa. Its northern distribution does not pass the 10°N latitude, except in the Ethiopian Highlands. The southernmost distribution reaches Angola and Malawi. Not established outside mainland Africa.

Distribution map for Africa, based upon specimen records with georeferences, is available at:

http://projects.bebif.be/fruitfly/taxoninfo.html?id=122

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