A REVIEW OF THE FRUIT FLY TRIBE PLIOMELAENINI (DIPTERA: TEPHRITIDAE: TEPHRITINAE) IN THE INDO-AUSTRALIAN REGION

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Abstract

Five genera and 17 species of Indo-Australian Tephritinae are placed in the tribe Pliomelaenini. *Quadrimelaena* gen. n. is described to include *Q. quadrimaculata* (Agarwal & Kapoor), comb. n. from India, *Q. sonani* (Shiraki), comb. n. from Taiwan [type species] and *Q. translucida* (Hering), comb. n. from Sri Lanka [all transferred from *Pliomelaena* Bezzi].

Introduction

The tribe Pliomelaenini is an Afrotropical and Indo-Australian group of Tephritinae that breeds in the flowerheads of Acanthaceae such as *Asystasia, Dicliptera, Hypoestes, Justicia* and *Lepidagathis* (Hancock *et al.* 2003). Previously known as tribe Platensinini, that name was transferred to the Dithrycini as a subtribe and redefined by Hancock (2001). All species have 3 pairs of frontal, 2 pairs of orbital and 4 scutellar setae, mostly of uniform coloration although the upper pair of orbitals are sometimes paler.

Five genera occur in the Indo-Australian region: *Elaphromyia* Bigot, *Pliomelaena* Bezzi, *Pseudafreutreta* Hering, *Quadrimelaena* gen. n. and *Sundaresta* Hering. The first three also occur in Africa. The 17 Indo-Australian species are poorly understood, with most known from very few specimens. Three species occur in Indonesia and two in Papua New Guinea but the tribe has not yet been recorded from Australia.

One currently included species is excluded from the tribe; others were noted by Hancock (2001). '*Elaphromyia*' *magna* Hardy, from Java (Hardy 1988), has a relatively short wing, bare arista, subshining black spot between eye and antennal base, dense scale-like setae on the scutum and a densely tomentose abdomen and does not belong in *Elaphromyia*. Its taxonomic position is uncertain but it appears to belong near *Afreutreta* Bezzi in tribe Eutretini.

Elaphromyia Bigot

This genus is characterised by the elongate, almost parallel-sided wings with numerous subhyaline or diffusely yellow spots on a brown pattern. Vein R_1 lacks a bare, non-setose dorsal area below the end of vein Sc. Six Indo-Australian species are known.

Elaphromyia hardyi Wang, from southwestern China (Sichuan), differs from all other species in having a basomedial longitudinal hyaline band on the wing. It was illustrated by Wang (1998).

Elaphromyia multisetosa Shiraki, from Taiwan, is distinguished from *E. pterocallaeformis* by the palpi, which have numerous stout, black setae on their ventral margins. It was illustrated by Shiraki (1933).

Elaphromyia pterocallaeformis (Bezzi) is widespread in south and southeast Asia, including Indonesia (Hering 1941). It lacks a medial longitudinal hyaline band and the palpi have only a few yellowish setae on their ventral margins. It was illustrated by Hardy (1974) and Wang (1998). *E. incompleta* Shiraki and *E. i. punctata* Shiraki were placed as synonyms by Wang (1998).

Elaphromyia siva Frey is a small species known only from Sri Lanka.

Elaphromyia transversa Hardy occurs in Papua New Guinea. It resembles *E. pterocallaeformis* but the subhyaline spots on the wing are arranged in transverse rather than longitudinal rows. It was illustrated by Hardy (1988).

Elaphromyia yunnanensis Wang is known from southwestern China (Sichuan, Yunnan). It differs from *E. pterocallaeformis* in the larger and more extensive hyaline wing spots along the anterior and posterior margins and the shorter oviscape. It was illustrated by Wang (1998).

Pliomelaena Bezzi

Indo-Australian species generally have the head and thoracic setae yellow with a brownish tint, except for the postvertical, lateral vertical and postocular setae, which are whitish. The wing has three hyaline spots in cells r_1 and r_{2+3} forming a more or less distinct 'V' (as in all Afrotropical species) and three hyaline indentations in cell m. *Protephritis* Shiraki and *Indaresta* Hering are synonyms (Hardy 1988). Five species are included.

Pliomelaena callista (Hering) is known from Indonesia and Papua New Guinea. The wing pattern is a little variable but it has three hyaline indentations in cell r_1 and no hyaline spot in cell br before R-M crossvein. It was illustrated by Hering (1941) and Hardy (1988).

Pliomelaena luzonica Hardy is known only from Luzon in the Philippines. It is similar to *P. callista* but has only two hyaline indentations in cell r_1. It was illustrated by Hardy (1974).

Pliomelaena sauteri (Enderlein) is known from Taiwan and southeast China (Hainan). It is very similar to *P. callista* but has the hyaline spot at the base of the pterostigma well developed, rather than vestigial or absent. It was illustrated by Enderlein (1911) and Wang (1998).

Pliomelaena udhampurensis Agarwal & Kapoor is known only from northwestern India (Jammu and Kashmir). It is similar to *P. luzonica* but has a hyaline spot in cell br before R-M crossvein and the abdomen is almost entirely brown to black. The yellowish head and thoracic setae are a darker brown than in other species. It was illustrated by Agarwal and Kapoor (1988).

Pliomelaena zonogastra (Bezzi) is known from India (including Nicobar Islands) and southwestern China (Yunnan). It is similar to *P. udhampurensis* but the abdomen is largely reddish-yellow, rather than brown to black. It was illustrated by Wang (1998).

Pseudafreutreta Hering

This largely Afrotropical genus differs from *Pliomelaena* in the absence of a row of setae along the sides of the epistome and the darker wings, the hyaline spots and indentations being small or largely absent. Vein R_1 lacks a bare, non-setose dorsal area below the end of vein Sc (present in *Pliomelaena*).

Pseudafreutreta nigrifacies (Wang) occurs in southwestern China (Yunnan) and northern Thailand. It was transferred from *Platensina* Enderlein by Hancock (2001) and illustrated by Hancock and McGuire (2002). A male has been collected on *Strobilanthes imbricatus* (Acanthaceae) in Thailand (Hancock and McGuire 2002).

Quadrimelaena gen. n.

Type species *Protephritis sonani* Shiraki, 1933, by present designation.

Quadrimelaena closely resembles *Pliomelaena* in most characters, including the presence of a row of setae along the sides of the epistome, but these setae are weaker, the wings are narrower and more elongate, there are two hyaline spots (one anterior and one posterior, rather than one medial) in the outer half of cell dm beyond the level of the R-M crossvein and four (rather than three) marginal/submarginal spots or indentations in cell m, the inner, extra indentation above the apex of vein Cu_1. The hyaline spots in cells r_1 and r_{2+3} do not form a 'V' and several small posterior spots (absent in *Pliomelaena*) are present in cell r_1 along vein R_{2+3}. It further differs from Asian *Pliomelaena* species in the more rounded third antennal segment (rather than slightly concave dorsally), longer and almost parallel ocellar setae and the brown rather than yellowish head and thoracic setae, except for the whitish postvertical, lateral vertical and postocular setae. For a more detailed description see that of the type species (Shiraki 1933).

Three species are included, all transferred from *Pliomelaena*. Korneyev (1999) suggested that *Ictericodes cashmerensis* (Hendel) might also belong here but its head and thoracic setae are mostly yellow-brown with the upper orbitals paler, there is a brown spot between the eye and antennal base, vein R_{4+5} is extensively setose above and below and cell bcu has a longer apical extension.

Quadrimelaena quadrimaculata (Agarwal & Kapoor), comb. n. is known only from northwestern India (Himachal Pradesh). It differs from *Q. sonani* in the fewer small hyaline discal spots and was illustrated by Agarwal and Kapoor (1989).

Quadrimelaena sonani (Shiraki), comb. n. occurs in Taiwan. It was originally placed in *Protephritis* and illustrated by Shiraki (1933).

Quadrimelaena translucida (Hering), comb. n. occurs in Sri Lanka. It differs from the other species in the more extensive hyaline discal areas and lack of a hyaline apical spot on the wing. It was illustrated by Hering (1942).

Sundaresta Hering

This genus differs from *Pliomelaena* primarily in the presence of two (rather than one) distinct marginal hyaline indentations in cell r_{2+3}. The oviscape is elongate, as long as or longer than the abdomen.

Sundaresta hilaris Hering is known only from Java and Sumba in Indonesia. It was illustrated by Hardy (1988).

Sundaresta malaisei (Hering) is widespread in India, Burma, southwestern China (Yunnan), Thailand and Laos. It differs from *S. hilaris* in the more numerous small hyaline spots on the wing. It was transferred from *Xyphosia* Robineau-Desvoidy and illustrated by Hancock and McGuire (2002). Both sexes have been collected on *Strobilanthes imbricatus* (Acanthaceae) in Thailand (Hancock and McGuire 2002).

References

AGARWAL, M.L. and KAPOOR, V.C. 1988. Four new species of fruit flies (Diptera: Tephritidae: Tephritini) together with redescription of *Trupanea inaequabilis* Hering and their distribution in India. *Journal of Entomological Research (New Delhi)* **12**: 117-128.

AGARWAL, M.L. and KAPOOR, V.C. 1989. New Tephritidae (Diptera) from India. *Entomologist's Monthly Magazine* **125**: 31-35.

ENDERLEIN, G. 1911. Trypetiden-Studien. *Zoologische Jahrbucher. Abteilung für Systematik, Oekologie und Geographie der Tierre* **31**: 407-460.

HANCOCK, D.L. 2001. Systematic notes on the genera of Australian and some non-Australian Tephritinae (Diptera: Tephritidae). *Australian Entomologist* **28**: 111-116.

HANCOCK, D.L. and McGUIRE, D.J. 2002. New species and records of non-dacine fruit flies (Diptera: Tephritidae) from south and southeast Asia. *Steenstrupia* **27**: 1-17.

HANCOCK, D.L., KIRK-SPRIGGS, A.H. and MARAIS, E. 2003. New records of Namibian Tephritidae (Diptera: Schizophora), with notes on the classification of subfamily Tephritinae. *Cimbebasia* **18**: 49-70.

HARDY, D.E. 1974. The fruit flies of the Philippines (Diptera: Tephritidae). *Pacific Insects Monograph* **32**: 1-266.

HARDY, D.E. 1988. The Tephritinae of Indonesia, New Guinea, the Bismarck and Solomon Islands (Diptera: Tephritidae). *Bishop Museum Bulletin in Entomology* **1**: i-vii, 1-92.

HERING, E.M. 1941. Dipteren von den Kleinen Sunda-Inseln. II. Trypetidae. *Arbeiten über morphologische und taxonomische Entomologie aus Berlin-Dahlem* **8**: 24-45.

HERING, E.M. 1942. Neue Gattungen und Arten palaearktischer und exotischer Fruchtfliegen. *Siruna Seva* **4**: 1-31.

KORNEYEV, V.A. 1999. Phylogeny of the subfamily Tephritinae: relationships of the tribes and subtribes. Pp 549-580, in: Aluja, M. and Norrbom, A.L. (eds), *Fruit flies (Tephritidae): phylogeny and evolution of behavior.* CRC Press, Boca Raton; 944 pp.

SHIRAKI, T. 1933. A systematic study of Trypetidae in the Japanese Empire. *Memoirs of the Faculty of Science and Agriculture, Taihoku Imperial University* **8**(Entomology 2): 1-509.

WANG, X.-j. 1998. The fruit flies (Diptera: Tephritidae) of the East Asian Region. *Acta Zootaxonomica Sinica* **21**(Supplement 1996): i-viii, 1-378, pls 1-41.