

NEW SPECIES AND RECORDS OF TRYPETINAE FROM BRUNEI DARUSSALAM (DIPTERA: TEPHRITIDAE)

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ABSTRACT. - Nine species of Trypetinae are recorded from Brunei Darussalam, including a new species, *Euphranta belalongensis*. The other species are: *Acanthonevra fuscipennis* Macquart, *Adrama determinata* (Walker), *Euphranta figurata* (Walker), *Hardyadrama excoecariae* Lee, *Sophira (Kambangania) ypsilon* (Rondani), *Sophira (Sophira) limbata limbata* Enderlein, *Themara ampla* Walker and *Themara hirtipes* Rondani. All are recorded for the first time, except for *E. figurata* and *T. hirtipes*.

KEY WORDS. - Trypetinae, Tephritidae, new species, new records, Brunei Darussalam

INTRODUCTION

Although Brunei Darussalam forms part of South-east Asia, its fruit fly fauna has been poorly studied compared to neighbouring countries such as Sarawak. Recently Chua (1998, 1999) published some information on the subfamily Dacinae, especially records of species found in Brunei Darussalam. Basic information on fruit flies from Brunei Darussalam would extend further our knowledge of the geographical range, distribution and fauna in Asia.

This paper deals with material from the collection of fruit flies (subfamily Trypetinae) held in the Department of Biology, Universiti Brunei Darussalam together with other specimens collected recently by the author.

All specimens, except the holotype of *Euphranta belalongensis* kept in the Natural History Museum (London, England), are held in the museum of the Department of Biology, Universiti Brunei Darussalam.

SYSTEMATICS

SUBFAMILY TRYPETINAE

Tribe Acanthonevrini

Acanthonevra fuscipennis Macquart

Acanthonevra fuscipennis Macquart, 1843:378.

Material examined. - 3 males, collected at Kuala Belalong Field Studies Centre, one each on 2 Feb.1996, A. G. Orr; 29 Nov.1997 and 27 Jul.1998, T. H. Chua.

Distribution. - India, Thailand, West Malaysia, Indonesia (Sumatra and Java) and Brunei Darussalam (new record).

Remarks. - Vein R_{2+3} is rather strongly undulate. The hyaline markings in males tend to be much more subdued or reduced (Hancock & Drew, 1995). However, the specimens on hand have much darker wings than those described by Hardy (1986), with the apex brown rather than hyaline or subhyaline, thus making Hardy's key unworkable. All specimens on hand do not have any hyaline spot in cell r_{4+5} . Discovery of females may show this to represent a distinct species.

Sophira (Kambangania) ypsilon (Rondani)

Themara ypsilon Rondani, 1875: 435.
Sophira (Kambangania) disjuncta Hardy, 1980: 141.

Material examined. - 1 female, Bukit Patoi, Temburong, 12 Jan. 1996, A. G. Orr.

Distribution. - Malaysia (Peninsular and Sarawak), Indonesia (Sumatra) and Brunei Darussalam (new record).

Remarks. - *Sophira ypsilon* is recorded for the first time from Brunei Darussalam. This is a common species found through out the southern region of South-east Asia.

Sophira (Sophira) limbata limbata Enderlein

Sophira limbata Enderlein, 1911: 435.

Material examined. - 1 female, Kuala Belalong Field Studies Centre, 1 Feb. 1996, A. G. Orr.

Distribution. - Sumatra, Malaysia (Sarawak) and Brunei Darussalam (new record).

Remarks. - Two subspecies of *S. limbata*: *S. limbata limbata* and *S. limbata borneensis* Hering are recognized. The wing of this species has two brown bands: a costal band and a characteristic diagonal broad band from the base of cell cua_1 to apex of cell r_{4+5} . The Bruneian specimen resembles more the *limbata* subspecies with the costal band continuous through apex of cell r_{2+3} , and cell m brown. However, the black markings on the abdomen of the examined specimen are similar to that illustrated for subspecies *borneensis* by Hardy (1980, Fig. 4), suggesting that the differences may be varietal rather than subspecific.

Themara ampla Walker

Themara ampla Walker, 1856: 33.
Themara microcephala Hering, 1939: 175.

Material examined. - 1 female, Kuala Belalong Field Studies Centre, 1 Feb. 1996, A. G. Orr.

Distribution. - West Malaysia, Singapore, Sumatra, East Malaysia and Brunei Darussalam (new record).

Remarks. - This species can be recognised from *T. hirtipes* and *T. maculipennis* by the non-vittate scutum, absence (usually) of a hyaline spot in cell r_{4+5} beyond the r-m crossvein and the males not having stalked eyes. Synonymy of *T. microcephala* with *T. ampla* was established by Hardy (1986).

Themara hirtipes Rondani

Themara hirtipes Rondani, 1875: 435.
Themara enderleini Hering, 1938: 409.
Themara palawanica Hering, 1938: 410.
Themara yumana Zia, 1963: 646.

Material examined. - 2 males, 1 Feb. 1996, A. G. Orr; 1 female, 27 Jul. 98, T. H. Chua, all from Kuala Belalong Field Studies Centre.

Distribution. - China, India to Sarawak and Palawan, Brunei Darussalam.

Remarks. - This widely distributed species was first recorded from Brunei by Hardy (1986) and from Belalong by Cranbrook & Edwards (1994). The length of the eye stalks is variable (Hardy, 1973), but one specimen on hand from Belalong has very long stalks (1.5 times thorax and abdomen combined). For discussion of synonymies refer to Hardy (1974)

Tribe Adramini

Adrama determinata (Walker)

Dacus determinatus Walker, 1856: 133.

Material examined. - 1 male, 1 female caught around fruits of *Lepisanthes ?falcata* (Sapindaceae), Kuala Belalong Field Studies Centre, 27 Jul. 1998; 6 males, 4 females ex. *Lepisanthes ?falcata*, same locality, 27 Jul. 1998; 1 male, Kampong Kianggeh, 26 Jun. 1999; T. H. Chua.

Distribution. - Malaysia, Singapore, Indonesia, southern Philippines and Brunei Darussalam (new record).

Remarks. - Hardy (1986) recorded that the larvae of this species infesting seeds of tea (*Camellia sinensis*) in Indonesia. Here we have observed adults congregating under the canopy of *Lepisanthes ?falcata* (Sapindaceae) in Kuala Belalong Field Studies Centre and females ovipositing in the fallen fruits. The larvae feed on the seeds of *Lepisanthes ?falcata*.

Tribe Euphrantini

Euphranta belalongensis, new species
(Fig. 1)

Material examined. - BRUNEI DARUSSALAM. Holotype female, Kuala Belalong Field Studies Centre, attracted to light, 29 Nov. 1997, T. H. Chua. Specimen has been deposited in the Natural History Museum, London, England.

Distribution. - Brunei Darussalam.

Description. - Female: length of body (including ovicape) 7.3 mm, of wing 5.2 mm. Head mostly black;

frons depressed centrally, depressed area dark brown to black, area above lunule brown, rest of frons fulvous, with black bristles; 2 pairs of frontal and 1 pair orbital bristles. Lunule small, about 1/3 width of frons, crescent shape. Ocellar triangle black, ocellar bristles absent, postocellars absent. Vertical bristles present. Genal bristles present. Occiput black, except area immediately below and between vertical bristles fulvous. Postocular bristles black. Face slightly convex, shining light brown, except marginal areas next to eyes fulvous. Antennae short, about half length of face, segment 3 rounded apically; arista plumose, black except brown basally.

Thorax generally black. Scutum black with areas before transverse sutures greyish. Postpronotal lobes (except anterior, dorsal parts) and notopleural calli light brown. Scutellum yellowish brown, with basal W-shaped area dark brown. Pleuroterga with fine whitish erect hairs. Postnotum black. Bristles well developed and black: 2 scapulars (inner pair weak), 2 notopleurals, 1 (anterior) supra alar, 2 posterior alars, 1 dorsocentral, 1 mesopleural, 1 pteropleural, 1 sternopleural and 2 scutellars. Dorsocentral bristles placed well behind line of supra-alars. Sternopleural bristles black and located posteriorly. Anepisternum and katepisternum with fine whitish hairs. Halteres light brownish. Legs generally brown with black markings as follows: fore femora brown with black dorso-lateral markings near apex, mid femora brown with basal 2/3 black, hind femora brown with middle 1/3 black. Fore tibiae fuscous, mid and hind tibiae black except fuscous apically. Wings elongate,

without a distinct spine at base of cell sc (stigma). Vein R_1 setose above; vein R_{4+5} setose at base; r-m cross-vein placed near proximal 1/3 of discal cell. Cell sc and area below sc covering part of cells r_1 , r_{2+3} and br including r-m cross-vein dark brown; rest of cells r_1 , r_{2+3} and br yellowish brown. Distal half of wing dark brown except apical areas of cells r_{2+3} , r_{4+5} and m clear. Cells bc, c, dm, rest of r_{2+3} and two wedges from anterior margin of wing near end of R_{2+3} , yellowish brown. Rest of wing hyaline.

Abdomen elongate-oval. Tergum I+II, III and IV black, terga V and VI orange brown without black markings; segment VI smaller than segment V. Oviscape orange brown, about as long as terga IV-VI combined; ovipositor sheath brown with dark lateral vittae.

Male. Unkown.

Remarks. - This species may be distinguished from all others in the genus by the characters given above. It appears closest to *E. flavoscutellata* Hardy (1970, 1974) from the Philippines. However, in *E. flavoscutellata* the wing has only one hyaline spot at apex of cell r_{2+3} , the legs yellow with brown spots, the abdominal terga I-II are yellow to rufous and terga V-VI black. The specimen was attracted to light.

Etymology. - The specific name is derived from Kuala Belalong Field Studies Centre, run by Universiti Brunei Darussalam, at District of Tempurong, Brunei Darussalam.

Euphranta figurata (Walker)

Dacus figuratus Walker, 1856: 133.

Material examined. - 1 female, Kuala Belalong National Park, 27 Jul.1998, T. H. Chua.

Distribution. - Sarawak and Brunei Darussalam. See Chua & Hancock (1999) for a note on the type locality.

Remarks. - This species was recorded from Brunei Darussalam and redescribed by Chua & Hancock (1999), the original description by Walker (1856) being inadequate.

Hardyadrama excoecariae Lee

Hardyadrama excoecariae Lee, 1991: 107.

Material examined. - 1 female, Kampong Kianggeh, 15 Mar.1999, T. H. Chua.

Distribution. - Australia (Western Australia, Queensland), Singapore and Brunei Darussalam (new record).

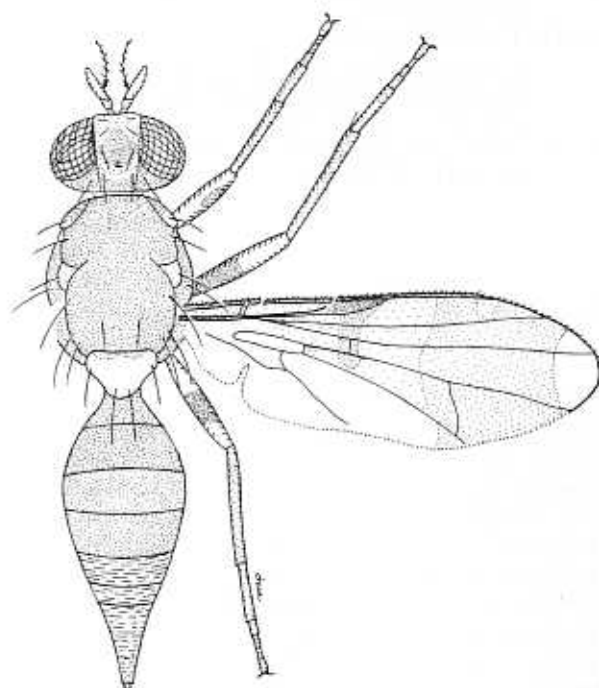


Fig. 1. *Euphranta belalongensis*, new species, female.

Remarks. - Australian specimens have small black markings on the scutum posteriorly but they lack postpronotal bristles (Permkam & Hancock, 1995). The specimen on hand appears to resemble more the Singaporean specimens, without black markings on the scutum but with postpronotal bristles. The larvae feed on the seeds of *Excoecaria agallocha* L. (Euphorbiaceae) (Lee, 1991), which also occurs in the mangroves of Brunei Darussalam.

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LITERATURE CITED

- Chua, T.H., 1998. *Dacini fruit flies of Brunei Darussalam (Diptera: Tephritidae: Dacinae)*, Abstracts of Fifth International Symposium on fruit flies of economic importance, 1-5 June 1998. Penang, Malaysia: 81.
- Chua, T.H., 1999. A survey of agriculturally important fruit flies of Brunei Darussalam. *Science Bull.*, 1: 3-6.
- Chua, T.H. & D.L. Hancock, 1999. Redescription of *Euphranta figurata* (Walker) (Tephritidae: Diptera). *Serangga*, 4: 285-289.
- Cranbrook (Earl) & D.S. Edwards, 1994. *A tropical rainforest*. The Royal Geographical Society and Sun Tree Publishing. 389 pp.
- Enderlein, G., 1911. Trypetiden-Studien. *Zool. Jahr. Abt. Syst. Geogr. Biol. Tierre*, 31: 407-460.
- Hancock, D.L. & R.A.I. Drew, 1995. New genus, species and synonyms of Asian Trypetinae (Diptera: Tephritidae). *Malays. J. Science*, 16A: 45-59.
- Hardy, D.E., 1959. The Walker Types of fruit flies (Tephritidae: Diptera) in the British Museum collection. *Bull. Br. Mus. Nat. Hist. (Entomol.)*, 8: 159-242.
- Hardy, D.E., 1970. Tephritidae (Diptera) collected by the Noona Dan Expedition in the Philippine and Bismarck Islands. *Ent. Med.*, 38: 71-136.
- Hardy, D.E., 1973. The fruit flies (Tephritidae - Diptera) of Thailand and bordering countries. *Pacif. Ins. Monogr.*, 31: 1-353.
- Hardy, D.E., 1974. The fruit flies of the Philippines (Diptera: Tephritidae). *Pacif. Ins. Monogr.*, 32: 1-266.
- Hardy, D.E., 1980. The *Sophira* group of fruit fly genera (Diptera: Tephritidae: Acanthonevrini). *Pacif. Ins. Monogr.*, 22: 123-161.
- Hardy, D.E., 1983. The fruit flies of the tribe Euphrantini of Indonesia, New Guinea, and adjacent islands (Tephritidae: Diptera). *Int. J. Ent.*, 25: 152-205.
- Hardy, D.E., 1986. Fruit flies of the subtribe Acanthonevrina of Indonesia, New Guinea, and the Bismarck and Solomon Islands (Diptera: Tephritidae: Trypetinae: Acanthonevrini). *Pacif. Ins. Monogr.*, 42: 1-191.
- Hering, E.M., 1938. Neue palaeartische und exotische Bohrfliiegen. 21. Beitrag zur Kenntnis der Trypetidae (Dipt.). *Deut. Ent. Zs.*, 1938: 397-417. 1 pl.
- Hering, E.M., 1939. Neue Trypetiden der Erde. *Verh. VII Intern. Kongr. Ent.*, 1938, 1: 165-190.
- Lee, S.C., 1991. Fruit flies (Diptera: Tephritidae) reared from fruits of *Excoecaria agallocha* (Euphorbiaceae) in Singapore mangroves. *Raffles Bull. Zool.*, 30: 105-118.
- Macquart, J., 1843. Diptères exotiques nouveaux ou peu connus. *Mém. Soc. Science Agr. Lille*, 1842: 162-460.
- Permkam, S. & D.L. Hancock, 1995. Australian Trypetinae (Diptera: Tephritidae). *Invertebr. Taxon.*, 9: 1047-1209.
- Rondani, C., 1875. Muscaria exotica Musei Civici Januensis. Fragmentum III. Species in Insula Bonae fortunae (Borneo), Provincia Sarawak, etc. *Annali Mus. civ. Stor. nat. Genova*, 7: 421-464.
- Walker, F., 1856. Catalogue of the dipterous insects collected at Sarawak, Borneo by Mr. A. R. Wallace, with descriptions of some new species. *J. Proc. Linn. Soc. Lond. (Zool.)*, 1: 105-136.
- Zia, Y., 1963. Notes on Chinese trypetid flies. II. *Acta Ent. Sinica*, 12: 631-648.