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Revision of the tropical fruit flies (Diptera : Tephritidae : Dacinae) of South-east Asia. II. *Dacus* Fabricius*

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Abstract

A total of 44 species are placed in the genus *Dacus* in South-east Asia and divided amongst four subgenera, viz. *Callantra* Walker, *Dacus* Fabricius, *Didacus* Collart and *Leptoxyda* Macquart. In all, 27 species are revised and the following 17 new species described: *Dacus* (*Callantra*) *ambonensis*, *D. (C.) atrimarginatus*, *D. (C.) calirayae*, *D. (C.) feijeni*, *D. (C.) insulosus*, *D. (C.) lagunae*, *D. (C.) leongi*, *D. (C.) maculipterus*, *D. (C.) murphyi*, *D. (C.) nanggaleae*, *D. (C.) ooi*, *D. (C.) ramanii*, *D. (C.) siamensis*, *D. (C.) tenebrosus*, *D. (C.) vijaysegarani*, *D. (C.) wallacei*, *Dacus* (*Dacus*) *santongae*. A key to species within the genus *Dacus* is presented based on characters that bypass subgeneric groupings, because of the present uncertainty of subgeneric limits. Information is given on location of type specimens, host plants, attractant records and geographic distributions. Lectotypes are designated for *D. conopsoides* de Meijere, *D. esakii* (Shiraki), *D. icariiformis* Enderlein and *D. persicus* Hendel. Thirteen new synonymies within *Dacus* are established: *Callantra ihai* Shiraki [of *Dacus esakii* (Shiraki)]; *Callantra smieroides* Walker, *Mellessis destillatoria* Bezzi, *Mellessis eumenoides* Bezzi, *Mellessis bioculata* Bezzi, *Callantra unifasciatus* Hardy, *Callantra variegata* Wang (all of *Dacus longicornis* Wiedemann); *Mellessis apicalis* Shiraki [of *Dacus nummularius* (Bezzi)]; *Callantra munroi* Zaka-ur-Rab, *Callantra nepalensis* Hardy, *Callantra quadristriata* Munro [all of *Dacus polistiformis* (Senior-White)]; *Callantra ziae* Wang [of *Dacus satanas* (Hering)]; *Dacus coccinia* Premlata & Awtar Singh (of *Dacus ciliatus* Loew). *Dacus persicus* Hendel is removed from synonymy with *D. longistylus* Wiedemann. *Sinodacus fuscans* Wang is placed as a new synonym of *Bactrocera brachycera* (Bezzi).

Introduction

Currently we divide the tephritid subfamily Dacinae into four genera: *Ichneumonopsis* Hardy, *Monacrostichus* Bezzi, *Bactrocera* Macquart and *Dacus* Fabricius. The first two have been treated by Drew and Hancock (1994) in the first paper of this series revising the South-east Asian Dacinae. Genus *Bactrocera* will be treated in future parts of the series.

Over almost two centuries of taxonomic research into Tephritidae, the genus *Dacus* has been used mostly in a very broad sense. More recently Drew (1989) adopted a narrower definition to accommodate only those species of Dacinae with fused abdominal terga. These species occur mostly in the Afrotropical region with only a few in the Asian/Pacific regions. This concept of *Dacus* is followed here.

Within the Asian region most *Dacus* species belong to the subgenus *Callantra* Walker, the majority having been described *ad hoc* during this century. No previous attempt has been made to review the genus *Dacus* or the major subgenus (*Callantra*) for the Asian region. Two pest species, *D. (C.) longicornis* Wiedemann and *D. ciliatus* Loew are included; see White and Elson-Harris (1994) for review.

The subgenus *Semicallantra* Drew was incorrectly placed in *Dacus* by Drew (1989). The type species, *D. aquilus* Drew, has free abdominal terga. Consequently *Semicallantra* will be discussed under a future revision of the genus *Bactrocera*.

*Part I: *Invertebrate Taxonomy* 8, 829–838 (1994).

As a result of extensive field collecting programmes in the region, undertaken by Australian Plant Quarantine (J. Turner) and workers involved in ACIAR (Australian Centre for International Agricultural Research) projects, we are now in a position to undertake a revision of the genus *Dacus*. This is presented below.

Terminology and abbreviations

Morphological terminology follows McAlpine (1981) and as explained in Drew and Hancock (1994). Setae are abbreviated as follows: *anepst.*, anepisternal; *ia.*, intra-alar; *npl.*, notopleural; *prsc.*, prescutellar; *p.sa.*, posterior supra-alar; *sa.*, supra-alar; *sc.*, scutellar; *scp.*, scapular.

The following abbreviations have been used for specimen depositories:

ANIC	Australian National Insect Collection, Canberra
APQS	Animal and Plant Quarantine Service, Guangzhou, China
ASB	Institute of Zoology, Academia Sinica, Beijing, China
BMNH	The Natural History Museum, London, UK
BPBM	Bernice P. Bishop Museum, Honolulu, Hawaii, USA
DOAC	Department of Agriculture, Chiang Mai, Thailand
ITZ	Instituut voor Taxonomische Zoologie, Amsterdam, Netherlands
MBB	Museum Zoologicum Bogoriense, Bogor, Java
MEA	Plant Quarantine Laboratory, Tainan Branch Office, Bureau of Commodity Inspection and Quarantine, Ministry of Economic Affairs, Taiwan
MNHN	Museum Nationale d'Histoire Naturelle, Paris, France
MSNM	Museo Civico di Storia Naturale, Milano, Italy
MUA	Zoology Museum, Muslim University, Aligarh, India
NCIP	National Collection of Insects, Pretoria, South Africa
NHMB	Naturhistorisches Museum, Basel, Switzerland
NIAS	Entomological Museum, National Institute of Agricultural Science, Tokyo, Japan
NMNH	National Museum of Natural History, Smithsonian Institution, Washington DC, USA
NRS	Naturhistoriska Riksmuseet, Stockholm, Sweden
NUS	National University of Singapore
NUT	National University of Taiwan, Taipei
PUC	Department of Zoology, Punjab University, Chandigarh, India
QDPI	Queensland Department of Primary Industries, Brisbane, Australia
RNHL	Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands
UZMH	University Zoological Museum, Helsinki, Finland
ZMB	Zoologisches Museum, Berlin, Germany
ZMUC	Zoological Museum, University of Copenhagen, Denmark

Some localities in Peninsular Malaysia are abbreviated as follows:

TN	Transect North, from Kuala Kangsar (west coast, TN 1) to Kota Bharu (east coast, TN 17), sites approximately 20 km apart
TS	Transect South, from Jalan Kebun (west coast, TS 1) to Kuantan (east coast, TS 20) through Kuala Lumpur, sites approximately 20 km apart.

Subgeneric classification

Definition of subgenera within the Asian species of *Dacus* has proven a difficult task. Many of the characters previously used, for example presence or absence of supra-alar bristles and the pecten of cilia on abdominal tergum III in males, are of little use, varying between closely related species. The classification of Munro (1984), even at a subgeneric level, cannot be applied to the Asian fauna.

Pending a critical review of subgeneric limits within the Dacinae we have adopted a conservative approach, utilising only those names in current use. Subgenus *Callantra* Walker is recognised by the elongate antennae. Subgenera *Didacus* Collart and *Leptoxyda* Macquart have been retained for the three species of African affinity, *D. ciliatus* Loew, *D. keiseri* (Hering) and *D. persicus* Hendel, despite the use of distinguishing characters that in other subgenera are variable, as it would be premature to synonymise them. All other species are referred to subgenus *Dacus* Fabricius.

Two subgenera currently in synonymy, *Mellesis* Bezzi and *Neodacus* Perkins, eventually may be reinstated to accommodate the non-cucurbit-feeding species here included in *Callantra* or *Dacus*, respectively, with *D. sphaeroidalis* (Bezzi) forming a link between them on antennal

length and abdomen shape. The Madagascan subgenus *Tythocalama* Munro also appears to be allied closely to these two (presumed) asclepiad-feeding groups, as do those Australian species currently placed in either *Dacus* or *Didacus*. It is in this group of Asian, Madagascan and Australasian subgenera that the presence or absence of supra-alar bristles and the abdominal pecten in males are unreliable subgeneric characters.

Excluded taxa

Four species previously regarded as part of the Asian *Dacus* fauna have been excluded. *Dacus limbipennis* Macquart is a synonym of *D. armatus* Fabricius from Africa (Drew *et al.* 1994). *Callantra splendida* Perkins and *Mellesis brachycera* Bezzi have free abdominal terga and belong in *Bactrocera* Macquart (White and Wang 1992; I. M. White, unpublished observations). *Sinodacus fuscans* Wang, placed in *Dacus* (*Didacus*) by Liang *et al.* (1993), is now considered to be a new synonym of *Bactrocera brachycera* (Bezzi).

Systematics

Genus *Dacus* Fabricius

Dacus Fabricius, 1805: 272. – Drew, 1989: 16. Type species: *Dacus armatus* Fabricius, 1805, by subsequent designation of Speiser, 1924: 140 and confirmed by Hendel, 1927a: 25.

Diagnosis

Dacinae with fused abdominal terga; abdomen elongate-oval to elongate and petiolate; one pair of scutellar bristles; short broad scutellum; usually with a pecten on male abdominal tergum III; prescutellar bristles absent; shining spots present on abdominal tergum V; posterior margin of male abdominal sternum V with only a slight concavity.

Comments

Within the genus *Dacus* some characters previously used to define subgenera (Drew 1979) are now considered variable, especially presence of supra-alar bristles (absent in some species). This genus differs from *Bactrocera* in having fused abdominal terga, abdominal shape elongate-oval to elongate and petiolate and a short broad scutellum. It differs from *Ichneumonopsis* in having an elongate smooth arista, non-setose vein R_{4+5} , broad cell *bm* in wing, fused abdominal terga, frontal bristles on head present and an indistinct tergum VI in female abdomen. Further, *Dacus* differs from *Monacrostichus* in the absence of transverse furrows across the face and scutum, a shorter cell *sc* in wing, no pronounced curvatures in veins R_{2+3} and *M*, and vein A_1+CuA_2 usually reaching the wing margin.

Some intraspecific variation occurs within *Dacus*. The yellow thoracic areas are often stained reddish to pale fuscous and, in teneral specimens, the fuscous wing bands often contain hyaline areas apically. In some species a narrow medial postsutural yellow vitta may be present or absent.

The geographic distributions of all known species of the genus *Dacus* in South-east Asia are given in Table 1.

Key to South-east Asian species of *Dacus*

1. Costal band very pale and indistinct, confluent with vein R_{4+5} and not overlapping it near apex; scutum with 3 longitudinal postsutural yellow vittae, the lateral pair often indistinct; antennae shorter than height of head; supra-alar bristles absent; male without pecten of cilia on abdominal tergum III; female with oviscapae elongate, as long as abdominal terga IV and V combined
D. (Leptoxyda) persicus Hendel
- Costal band fuscous and distinct, if confluent with vein R_{4+5} then overlapping it near apex; if medial postsutural yellow vitta present then either antennae longer than head and supra-alar bristles present, or male with a pecten of cilia on abdominal tergum III and female with oviscapae short, not longer than abdominal tergum V2
2. Costal band narrow, confluent with vein R_{2+3} except at apex; wing cells *bc* and *c* colourless; antennae shorter than height of head3

- Costal band broad, usually confluent with or overlapping vein R_{4+5} throughout most of or its entire length, if weakly overlapping vein R_{2+3} and not reaching vein R_{4+5} except at apex then wing cells bc and c with at least a pale fuscous tint and antennae longer than height of head5
3. Scutum with a transverse, prescutellar medial yellow vitta*D. (Dacus) hainanus* Wang & Zhao
Scutum without a medial yellow vitta4
4. Scutum and abdomen red-brown; wing with a fuscous anal streak*D. (Didacus) ciliatus* Loew
Scutum and abdomen largely black; wing without an anal streak*D. (Didacus) keiseri* (Hering)
5. Costal band not reaching or overlapping vein R_{4+5} except at apex; cells bc and c with a pale fuscous tint6
Costal band confluent with or overlapping vein R_{4+5} over most of or its entire length; cell c and usually cell bc either hyaline or fuscous, not with a pale fuscous tint7
6. Face with a dark spot in each antennal furrow; eye margin without a dark marking adjacent to antennal base; costal band narrow, pale below vein R_{2+3} and extending about half way to vein R_{4+5} ; cell bc with extensive covering of microtrichia; anal streak present*D. (Callantra) indecorus* (Hardy)
Face with a broad dark line across mouth border; eye margin with a dark marking adjacent to antennal base; costal band broader, almost reaching vein R_{4+5} ; cell bc without a complete covering of microtrichia (antero-apically only); anal streak absent*D. (Callantra) pedunculatus* (Bezzi)
7. Wing cells bc and c colourless8
Wing cell c fuscous, cell bc usually fuscous14
8. Scutum with a transverse prescutellar medial yellow vitta; costal band with a large apical spot crossing vein M; antennae short*D. (Dacus) santongae*, sp. nov.
Scutum without a transverse prescutellar medial yellow vitta; costal band not crossing vein M at apex; antennae elongate9
9. Abdominal tergum III fuscous, terga IV and V fuscous basally, laterally and down midline, largely pale posteriorly each side of the medial longitudinal dark band10
Abdomen with all terga black, at most with small pale posterior areas11
10. Hind femora fulvous on basal two-thirds; male without a pecten on abdominal tergum III*D. (Callantra) atrimarginatus*, sp. nov.
Hind femora fulvous on basal quarter; male with a pecten on abdominal tergum III*D. (Callantra) maculipterus*, sp. nov.
11. Costal band expanded medially across r-m crossvein*D. (Callantra) ramanii*, sp. nov.
Costal band not expanded over r-m crossvein12
12. Face yellow with 2 black spots; hind femora black on apical third*D. (Callantra) sinensis* (Wang)
Face black; hind femora black on apical half to three-quarters13
13. Tibiae fuscous; hind femora black on apical three-quarters*D. (Callantra) satanas* (Hering)
Tibiae fulvous except apical half of hind tibiae; hind femora black on apical half*D. (Callantra) crabroniformis* (Bezzi)
14. Supra-alar bristles absent15
Supra-alar bristles present19
15. Costal band expanded into a broad apical spot, reaching or crossing vein M; fore femora without spines; abdomen elongate-oval, not distinctly petiolate16
Costal band not expanded at apex to reach or cross vein M; fore femora with subapical spines; abdomen strongly petiolate17
16. Scutum with a large triangular postsutural medial yellow vitta; abdominal terga III–V with a black medial vitta*D. (Dacus) ortholomatus* Hardy
Scutum without a medial yellow vitta; abdominal terga III–V without a black medial vitta*D. (Callantra) sphaeroidalis* (Bezzi)
17. Costal band of uniform width throughout, not narrowed beyond r-m crossvein*D. (Callantra) polistiformis* (Senior-White)
Costal band narrowed beyond r-m crossvein, expanding again apically18
18. Anepisternal yellow stripe narrow, ending before anterior notopleural bristle; scutellum with a red-brown medial band*D. (Callantra) bispinosus* (Wang)
Anepisternal yellow stripe broad, reaching postpronotal lobe; scutellum yellow, without a red-brown medial band*D. (Callantra) esakii* (Shiraki)
19. Scutum with 2 lateral postsutural yellow vittae and 1 medial yellow vitta20
Scutum without lateral postsutural yellow vittae; medial vitta present or absent22
20. Scutum with medial yellow vitta elongate, extending anteriorly before suture; costal band confluent with vein R_{4+5} below cell sc*D. (Callantra) vittatus* (Hardy)
Scutum with medial yellow vitta short, not extending anterior to mesonotal suture; costal band overlapping vein R_{4+5} below cell sc21

21. Costal band just overlapping vein R_{4+5} medially, broadening apically
*D. (Callantra) murphyi*, sp. nov.
 Costal band distinctly overlapping vein R_{4+5} , of uniform width throughout
*D. (Callantra) icariiformis* (Enderlein)
22. Head with a black spot on eye margin lateral to antenna; fore femora with subapical spines in both sexes23
 Head without a black spot on eye margin lateral to antenna, if spot present then between ptilinal suture and lunule; fore femora without subapical spines24
23. Scutum with a medial yellow vitta; oral margin of face with a black band
*D. (Callantra) conopsoides* de Meijere
 Scutum without a medial yellow vitta; oral margin of face without a black band
*D. (Callantra) wallacei*, sp. nov.
24. Costal band confluent with vein R_{4+5} to well beyond r-m crossvein and distinctly expanded at apex; wing with a fuscous anal streak25
 Costal band faintly or distinctly overlapping vein R_{4+5} at least beyond r-m crossvein, of uniform width or gradually expanding at apex; wing with anal streak present or absent30
25. Scutum with a broad triangular postsutural medial yellow vitta; costal band broadly expanded at apex to approach or weakly reach vein M*D. (Callantra) calirayae*, sp. nov.
 Scutum with postsutural medial yellow vitta short and narrow or absent, if present then costal band overlaps vein M as a large round spot26
26. Scutum mostly red-brown; costal band with apical spot large and round, overlapping vein M27
 Scutum mostly fuscous or black; costal band broadly expanded at apex, if crossing vein M then posteriorly diffuse28
27. Anepisternal yellow stripe broad, reaching anterior notopleural bristle; apical wing spot with a hyaline border at wing margin*D. (Callantra) nummularius* (Bezzi)
 Anepisternal yellow stripe narrow, not reaching anterior notopleural bristle; apical wing spot fuscous to wing margin*D. (Callantra) discophorus* (Hering)
28. Costal band with apical spot broadly but diffusely overlapping vein M
*D. (Callantra) subsessilis* (Bezzi)
 Costal band with apical spot not reaching vein M, reaching wing margin at or near apex of vein R_{4+5} 29
29. Anepisternal stripe broad, reaching almost to postpronotal lobe; apical wing spot evenly curved (crescent-shaped) below vein R_{4+5} *D. (Callantra) lagunae*, sp. nov.
 Anepisternal stripe of medium width, not extending to anterior notopleural bristle dorsally; apical wing spot irregularly curved below vein R_{4+5} *D. (Callantra) leongi*, sp. nov.
30. Scutum with a broad triangular postsutural medial yellow vitta, situated posteriorly 31
 Scutum with postsutural medial vitta absent or short and narrow, situated close to line of suture 32
31. Postpronotal lobes yellow; costal band not reaching vein M along r-m crossvein
*D. (Callantra) infernus* (Hardy)
 Postpronotal lobes fuscous to black; costal band reaching vein M along r-m crossvein
*D. (Callantra) bannatus* (Wang)
32. Postpronotal lobes dark fuscous to black; face with a black inverted U-shaped band and with or without a black band across oral margin; scutum and abdomen mostly black; fore and hind femora mostly black, at least on apical two-thirds or more33
 Postpronotal lobes yellow, if darkened then face with 2 black spots; scutum and/or abdomen mostly red-brown to fuscous and femora not as above35
33. Anatergite and katatergite mostly or entirely yellow*D. (Callantra) tenebrosus*, sp. nov.
 Anatergite black, katatergite mostly yellow34
34. Notopleura yellow*D. (Callantra) siamensis*, sp. nov.
 Notopleura black*D. (Callantra) vijaysegarani*, sp. nov.
35. Costal band indented basally to be confluent with vein R_{4+5} below cell sc , overlapping vein R_{4+5} from just before r-m crossvein to apex*D. (Callantra) feijeni*, sp. nov.
 Costal band overlapping vein R_{4+5} throughout36
36. Scutum, abdomen and femora fulvous to red-brown, without fuscous or black markings37
 Scutum black or with dark markings; abdomen mostly fuscous to black or with a dark medial vitta on terga III–V; femora often with dark markings38
37. Anatergite and katatergite mostly or entirely yellow; wing without an anal streak
*D. (Callantra) insulosus*, sp. nov.
 Anatergite fuscous, katatergite mostly yellow; wing with a pale anal streak
*D. (Callantra) longicornis* Wiedemann
38. Costal band overlapping vein M at apex; anal streak present; katatergite black; abdominal terga III–V mostly black*D. (Callantra) pullus* (Hardy)

- Costal band not overlapping vein M at apex; katatergite yellow to red-brown; abdominal terga III–V usually red-brown to fuscous with a dark medial vitta, if fuscous to black without a medial vitta then wing with anal streak absent39
39. Abdominal terga III–V fuscous to black without a medial vitta; costal band broad in cell br, almost reaching vein M above cell dc; anal streak entirely absent; anatergite dark, katatergite yellow40
- Abdominal terga III–V red-brown to fuscous with a narrow or broad dark medial vitta and often with dark lateral margins; costal band narrower, not extending more than half-way across cell br above cell dc; anal streak present at least in basal part of cell cup; anatergite and katatergite either both mostly yellow or both mostly red-brown41
40. Scutum black; abdominal terga I and II mostly black*D. (Callantra) formosanus* (Tseng & Chu)
Scutum red-brown to fuscous with black medial and posterior submedial markings; abdominal terga I and II mostly red-brown*D. (Callantra) trimacula* (Wang)
41. Abdominal terga II–V with a broad dark medial vitta and black lateral bands42
- Abdominal tergum II without a dark medial vitta, terga III–V with a narrow dark medial vitta but no black lateral bands 43
42. Scutum mostly black; costal band broadening slightly towards apex, occasionally reaching vein M; anal streak distinct*D. (Callantra) ooi*, sp. nov.
Scutum red-brown with black markings; costal band narrower, not broadening towards apex; anal streak pale and indistinct*D. (Callantra) pictus* (Hardy)
43. Anatergite and katatergite mostly yellow; costal band not faint and indistinct below vein R₄₊₅ below cells sc and r₁; anal streak absent beyond base of cell cup; abdomen broadly rounded posteriorly*D. (Callantra) nanggala*, sp. nov.
Anatergite and katatergite mostly red-brown; costal band faint and indistinct below vein R₄₊₅ below cells sc and r₁; anal streak broad, reaching apex of cell cup extension; abdomen narrowed posteriorly*D. (Callantra) ambonensis*, sp. nov.

Subgenus *Callantra* Walker

Callantra Walker, 1860: 153. See Drew (1989: 16) for other listings. Type species: *Callantra smieroides* Walker, 1860 (by monotypy).

Mellessis Bezzi, 1916: 114. – Hendel, 1927b: 58. Type species: *Monacrostichus crabroniformis* Bezzi, 1914 (by original designation).

Diagnosis

Subgenus *Callantra* contains species of *Dacus* that have a slight concavity on posterior margin of sternum V of male, male surstyli usually short, prescutellar bristles absent, combined lengths of antennal segments greater than vertical length of head, abdomen shape elongate and petiolate.

Known hosts are species of Cucurbitaceae or Asclepiadaceae.

Dacus (Callantra) ambonensis Drew & Hancock, sp. nov.

(Fig. 1)

Material examined

Holotype. ♂, Waai (<20 m), Ambon, Indonesia, 6.vii.1981, J. Turner, attracted to cue lure (BMNH).

Paratypes. **Indonesia**: 2♂, same data as holotype; 1♂, Paso (20–50 m), Ambon, 7.vii.1981, J. Turner, cue lure; 1♂, Hila/Mamua (25–100 m), Ambon, 5.viii.1981, J. Turner, cue lure (QDPI).

Description

Male

Head. Height 2.0 mm. Frons: length 1.63× breadth; red-brown with pale fuscous around orbital bristles and on anteromedial hump; latter covered with a few short pale hairs; bristles

black: 1 orbital; 2 frontals; lunule red-brown. Ocellar triangle black. Vertex red-brown. Face red-brown with a pair of medium-sized pear-shaped black spots; length 0.6 mm. Genae red-brown, small pale subocular spot present; black seta present. Occiput red-brown; occipital row with a large number of weak black setae. Antennae with segments 1 and 2 red-brown, segment 3 red-brown with fuscous on apex and outer surface; a weak pale dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.6 mm; 0.52 mm; 1.32 mm.

Thorax. Scutum dull black except with dark red-brown on posterolateral corners and narrow anterior margins, inside postpronotal lobes and between postpronotal lobes and notopleura. Pleural areas red-brown except black along anterior margin of anepisternal stripe and on katapisternum. Yellow markings as follows: notopleura; narrow anepisternal stripe, equal in width to notopleura dorsally, not continuing to katapisternum, anterior margin straight; narrow triangular markings along anterior margins of mesonotal suture; anatergite (anterior margin and posterior apex red-brown); small dorsocentral spot on katatergite (remainder red-brown). Lateral and medial postsutural vittae absent. Postpronotal lobes pale brown (may have been yellow originally and now discoloured). Mediotergite black with a narrow medial red-brown vertical vitta. Scutellum yellow except for a medium width red-brown basal band. Setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* 1, *anepst.* 1, *npl.* 2, *scp.* 4.

Legs. Femora and tibiae red-brown to pale fuscous except hind femora fulvous on basal third, tarsi fulvous, mid tibiae with an apical black spur.

Wing. Length 7.9 mm; cells bc and c fuscous; dense microtrichia covering all of cell c and most of cell bc; remainder of wing colourless except fuscous cell sc, broad fuscous costal band just overlapping R_{4+5} and expanding apically to reach midway between R_{4+5} and M, broad pale fuscous anal streak ending before wing margin; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate oval and petiolate, but not as strongly petiolate as in *D. (Callantra) longicornis*; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. Terga I and II dark fuscous to dull black except for a narrow pale fulvous to red-brown line along intersegmental line between terga I and II and posterolaterally on tergum II; terga III–V mostly dark fuscous except for a slightly darker narrow medial longitudinal vitta from posterior region of tergum III to end just before posterior margin of tergum V and large orange-brown to pale red-brown shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Indonesia (Ambon).

Hosts

No known record.

Comments

Dacus (Callantra) ambonensis is similar to *D. (C.) nanggalae* in possessing a broad costal band overlapping vein R_{4+5} , abdominal terga III–V with a narrow medial longitudinal dark band and no lateral dark markings. It differs from *D. nanggalae* in having the anatergite and katatergite mostly red-brown, the costal band pale coloured and indistinct below vein R_{4+5} adjacent to cells sc and r_1 and a distinct broad anal streak.

Table 1. Geographic distributions of species of genus *Dacus* in South-east Asia

In, India; SL, Sri Lanka; Pa, Pakistan; Ba, Bangladesh; Ne, Nepal; Bh, Bhutan; My, Myanmar; Ch, China; Ta, Taiwan; Ja, Japan; Ph, Philippines; Th, Thailand; La, Laos; Vi, Vietnam; PM, Peninsular Malaysia and Singapore; EM, East Malaysia; Su, Sulawesi; Am, Ambon; OI, other Indonesian islands. ?, unconfirmed literature record

Species	In	SL	Pa	Ba	Ne	Bh	My	Ch	Ta	Ja	Ph	Th	La	Vi	PM	EM	Su	Am	OI
Subgenus <i>Callantra</i>																			
<i>D. ambonensis</i> , sp. nov.																		+	
<i>D. atrimarginatus</i> , sp. nov.												+							
<i>D. bannatus</i> (Wang)								+											
<i>D. bispinosus</i> (Wang)								+	+										
<i>D. calirayae</i> , sp. nov.											+								
<i>D. conopsoides</i> de Meijere																			+
<i>D. crabroniformis</i> (Bezzi)	+																		
<i>D. discophorus</i> (Hering)	+	+																	
<i>D. esakii</i> (Shiraki)										+									
<i>D. feijeni</i> , sp. nov.						+													
<i>D. formosanus</i> (Tseng & Chu)									+										
<i>D. icariiformis</i> (Enderlein)	+																		
<i>D. indecorus</i> (Hardy)											+								
<i>D. infernus</i> (Hardy)												+							
<i>D. insulosus</i> , sp. nov.	+																		
<i>D. lagunae</i> , sp. nov.											+								
<i>D. leongi</i> , sp. nov.																+			
<i>D. longicornis</i> Wiedemann	+					+	+	+			+	+	+		+	+	+	+	+
<i>D. maculipterus</i> , sp. nov.												+							
<i>D. murphyi</i> , sp. nov.															+				
<i>D. nanggalae</i> , sp. nov.																	+		
<i>D. nummularius</i> (Bezzi)									+		+				+				
<i>D. ooi</i> , sp. nov.												+			+				
<i>D. pedunculatus</i> (Bezzi)											+								+

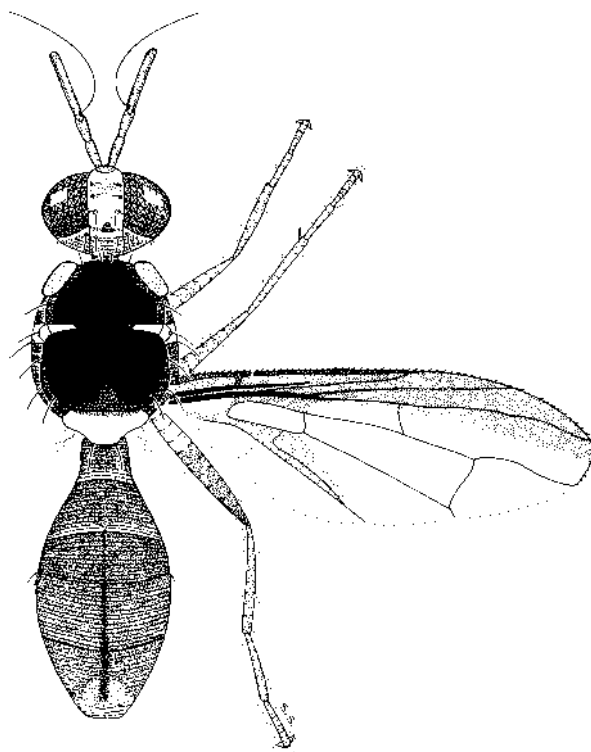


Fig. 1. *Dacus (Callantra) ambonensis* Drew & Hancock, sp. nov., male.

Dacus (Callantra) atrimarginatus White, sp. nov.

(Fig. 2)

Material examined

Holotype. ♂, near Sai Yok, 500 m, Kanchanaburi, Thailand, 9.ix.1975, R. Kano (BPBM).

Description

Male

Head. Height 1.3 mm. Frons: length 1.54x breadth; yellow posteriorly, transverse fuscous stripe between posterior pair of frontal setae, fulvous anteriorly; anteromedial hump with a few small black hairs; bristles black: 1 orbital; 2 or 3 frontals (3 on left side). Lunule fulvous, 0.24 mm high. Ocellar triangle and vertex black. Face fulvous with a large black spot in each antennal furrow and joined by a transverse band in groove just above mouth; face 0.3 mm high. Genae fulvous with fuscous subocular spot; seta fine. Occiput fuscous, yellow along eye margins; occipital row of several fine setae. Antennae fulvous with segment 3 darkened to fuscous apically; no strong seta on segment 2; arista dark, pale basally; length of segments: 0.4 mm; 0.38 mm; 0.74 mm.

Thorax. Scutum black except for a narrow red-brown area lateral to postpronotal lobe and a pale medial red-brown line just before scutellum (may be a very reduced medial vitta). Pleura black except red-brown to fuscous below postpronotal lobe and behind anepisternal stripe. Yellow markings as follows: postpronotal lobe; notopleura; triangular marking along anterior side of mesonotal suture; anepisternal stripe of medium width, reaching to posterior notopleural seta dorsally, continued onto katepisternum, anterior margin convex; anatergite and katatergite

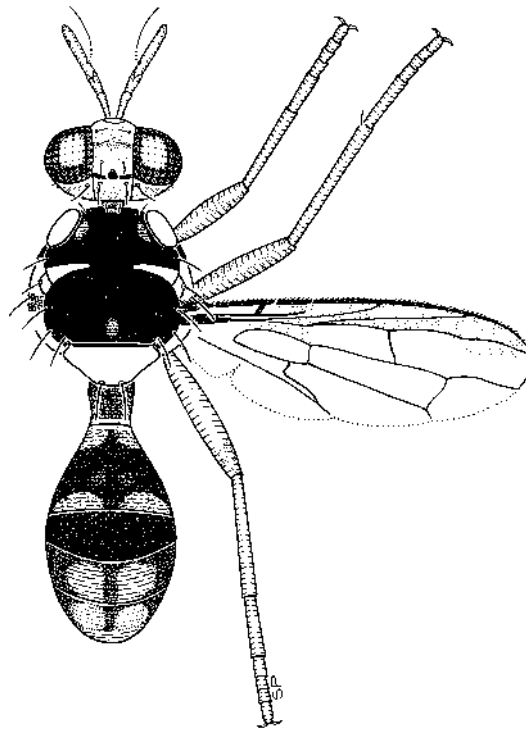


Fig. 2. *Dacus (Callantra) atrimarginatus* White, sp. nov., male.

(except posterior apices). Lateral postsutural vittae absent. Medial postsutural vitta apparently absent. Subscutellum and mediotergite black, except fuscous medially. Scutellum yellow. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4 (very long).

Legs. Femora red-brown except basal two-thirds hind femora fulvous. Tibiae and tarsi pale yellow. Mid tibiae each with an apical spur. Hind tibiae without a preapical bulge.

Wing. Length 4.8 mm; cells *bc* and *c* hyaline. Cell *c* with microtrichia for whole length along anterior region only. Remainder of wing hyaline except for fuscous narrow part of cell *br*, cell *sc*, broad costal band reaching R_{4+5} and expanded into a shallow spot from just before end of R_{2+3} ; spot about one-third depth of cell r_{4+5} . No anal streak. No aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten absent. Tergum I about 1.4× as long as narrowest width, fuscous except orange-brown each side of intersegmental line between terga I and II; tergum II fuscous to black basally, laterally and along midline, with shallow red-brown areas each side of midline; tergum III fuscous; terga IV and V fuscous basally and laterally and along midline, with large fulvous areas each side of midline; a pair of fulvous shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

No known record.

Distribution

Thailand (Kanchanaburi).

Hosts

No known record.

Comments

Dacus (Callantra) atrimarginatus is similar to *D. (C.) crabroniformis*, *D. (C.) maculipterus*, *D. (C.) ramanii*, *D. (C.) satanas* and *D. (C.) sinensis* in having the costal band confluent with or overlapping vein R_{4+5} and not expanded into a distinct spot at apex of wing, cells bc and c colourless and lacking lateral and medial postsutural yellow vittae. It differs from *D. crabroniformis*, *D. ramanii*, *D. satanas* and *D. sinensis* in having abdominal terga IV and V with pale areas posteriorly either side of a medial longitudinal dark band, and from *D. maculipterus* in having pale legs.

***Dacus (Callantra) bannatus* (Wang)**

(Fig. 3)

Callantra bannata Wang, 1990: 69–70, 75. Type locality: Xishuangbanna, China. Holotype ♂ in ASB.
Dacus (Callantra) bannata. – Liang *et al.*, 1993: 139.

Material examined

China: holotype ♂, Xishuangbanna, Yunnan, 650 m, 16.iii.1957, Wang Shuyong.

Diagnosis

Medium-sized species; face with distinct black facial spots and a spot below base of antennae all joined by black lines; postpronotal lobes dark fuscous to dull black; notopleura yellow; scutum dark fuscous to dull black with a red-brown medial longitudinal vitta and a broad triangular yellow marking posteriorly; lateral postsutural vittae absent; yellow triangle extending along anterior margin of mesonotal suture; notopleura yellow; scutellum yellow with a narrow dark basal band; broad yellow anepisternal (= mesopleural) stripe; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* 1, *anepst.* 1, *npl.* 2, *scp.* 4; wing with cell bc colourless and cell c fuscous, a broad dark fuscous costal band overlapping R_{4+5} with an irregular margin, anal streak absent; abdominal terga mostly dark fuscous to dull black; legs black except basal quarter of hind femora fulvous; abdomen petiolate and club shaped; abdominal terga mostly black with pale red-brown across posterior margin of tergum I, red-brown spots posterolaterally on tergum II, and red-brown across posterior margin of tergum V, oval spots black.

Attractant

No known record.

Distribution

China (Yunnan Province).

Hosts

No known record.

Comments

Dacus (Callantra) bannatus is similar to *D. (C.) infernus* in possessing a broad costal band overlapping vein R_{4+6} , anal streak absent and scutum black with a broad triangular postsutural yellow vitta. It differs from *D. infernus* in having the legs mostly black, costal band in wing irregular in outline (reaching vein M at r-m crossvein) and abdominal terga III–V mostly black.

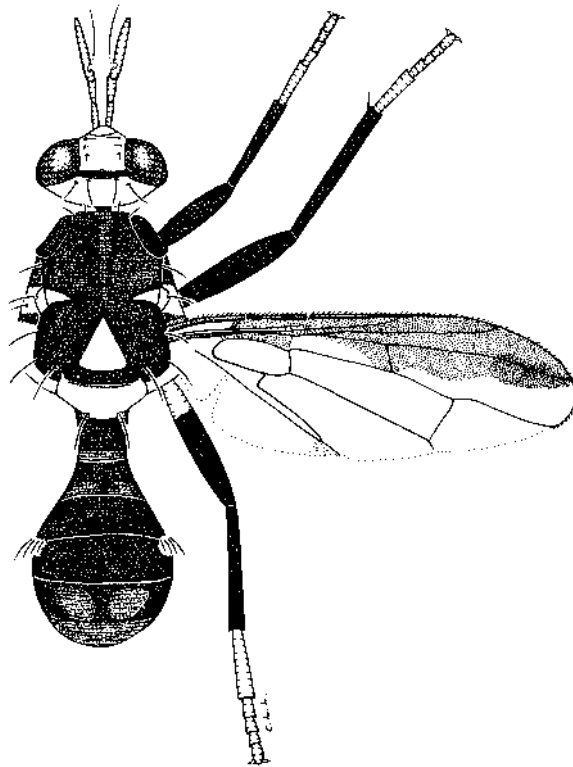


Fig. 3. *Dacus (Callantra) bannatus* (Wang), male.

Dacus (Callantra) bispinosus (Wang)

(Fig. 4)

Mellessis esakii Shiraki, 1939: 410 (partim, Taiwan specimen), misidentification.

Callantra bispinosa Wang, 1990: 71–73, 76. Type locality: Kunming, China. Holotype ♀ in ASB.

Dacus (Callantra) bispinosus. – Liang *et al.*, 1993: 139.

Material examined

China: holotype ♀, Kunming, Yunnan, 12.iv.1941; 1 ♀, Jiangsu Province, 26.ix.1916 (ASB).

Taiwan: colour slides (QDPI): 1 ♂, Taihoku, 13.v.1937, S. Issiki (paralectotype of *D. esakii*).

Diagnosis

Large species; face with a pair of small black spots joined by a black band across oral margin; postpronotal lobes yellow; notopleura yellow; scutum red-brown with a medial longitudinal lanceolate fuscous band, narrow lateral longitudinal fuscous lines and fuscous areas laterally between postpronotal lobe and notopleura and a small oval yellow marking posterocentrally; lateral postsutural yellow vittae absent; yellow triangle extending along anterior margin of mesonotal suture; anepisternal stripe narrow; scutellum yellow with a broad medial longitudinal red-brown band; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* absent, *anepst.* 1, *npl.* 2, *scp.* 4; wing with a broad dark fuscous costal band overlapping R_{4+5} except for a small area just distal to r-m crossvein, anal streak absent; fore femora with two preapical ventral spines; abdominal terga mostly red-brown.

Attractant

No known record.

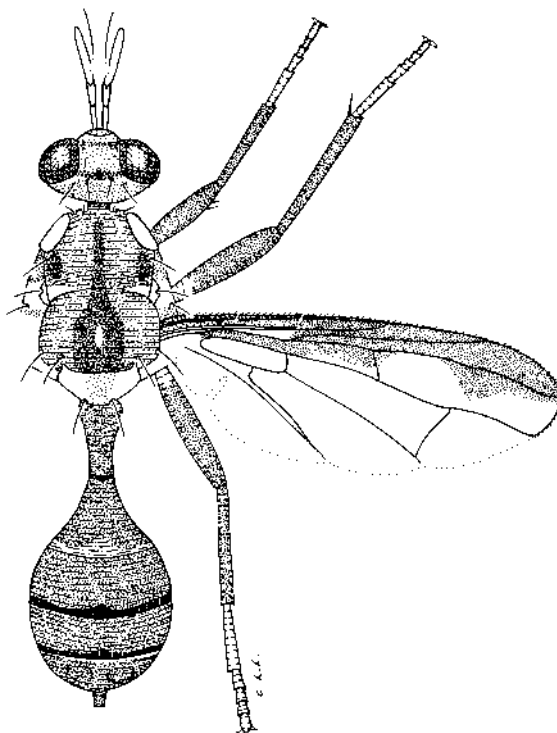


Fig. 4. *Dacus (Callantra) bispinosus* (Wang), female.

Distribution

China (Yunnan and Jiangsu Provinces); Taiwan.

Hosts

No known record.

Comments

Dacus (Callantra) bispinosus is similar to *D. (C.) polistiformis* and *D. (C.) esakii* in characters listed under the comments for *D. polistiformis*. It differs from *D. polistiformis* in having an irregularly margined costal band narrowing distal to r-m crossvein and a small medial yellow spot on the scutum (in some specimens). It differs from *D. esakii* in having a narrow anepisternal stripe and a red-brown medial band on the scutellum. It is possible that *D. bispinosus* is a synonym of *D. esakii* but more material needs to be studied before this can be resolved. The specimen listed above as a paralectotype of *D. esakii* belongs to *D. bispinosus*.

Dacus (Callantra) calirayae Drew & Hancock, sp. nov.

(Fig. 5)

Material examined

Holotype. ♂, Lake Caliraya, Laguna, Luzon, Philippines, 1.v.1983, R.A.I. Drew, attracted to cue lure (BMNH).

Paratype. **Philippines**: 1♂, Guimaras I., Jordan, National Mango Research and Development Institute, 13–27.xii.1994, I.M. White & H. Bignayan (BMNH).

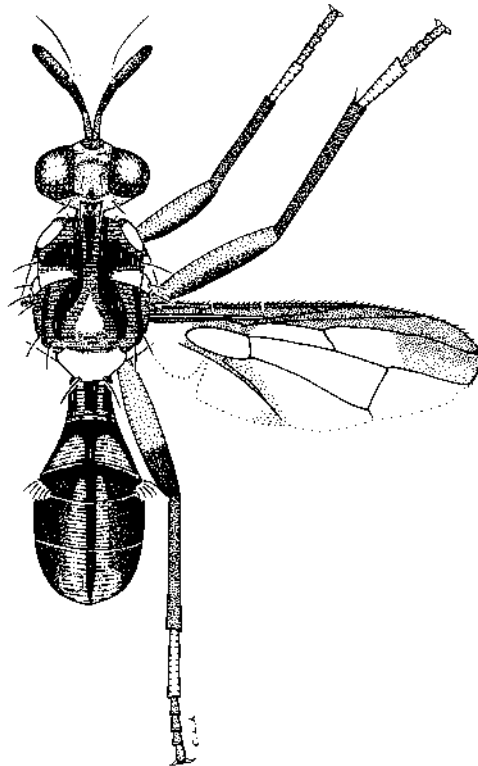


Fig. 5. *Dacus (Callantra) calirayae* Drew & Hancock, sp. nov., male.

Description

Male

Head. Height 1.6 mm. Frons: length 1.63× breadth; red-brown centrally, fulvous around margins, small pale fuscous areas around orbital bristles and on anteromedial hump; latter with a few small dark hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous. Ocellar triangle black. Vertex fuscous centrally, black laterally. Face fulvous with two medium-sized circular black spots connected by a narrow pale fuscous line along oral margin; length 0.44 mm. Genae fulvous, large dark fuscous subocular spot present; seta absent. Occiput dark fuscous, fulvous along eye margins; occipital row with 4 or 5 weak dark setae. Antennae with segment 1 fuscous, segments 2 and 3 dark fuscous except red-brown on part of inner surfaces of segment 3; arista black (red-brown basally); length of segments: 0.48 mm; 0.48 mm; 1.12 mm.

Thorax. Scutum red-brown with large irregularly shaped dull black markings. Pleura red-brown except black anterior and posterior to anepisternal stripe, on katepisternum and above hind coxae. Yellow markings as follows: postpronotal lobes; notopleura; broad anepisternal stripe reaching almost to postpronotal lobe dorsally, extending to katepisternum as a large transverse spot, anterior margin convex; broad triangular band along anterior margin of mesonotal suture; anatergite (posterior apex black); anterior two-thirds katatergite (remainder black); broad triangular marking in centre of scutum posterior to line of mesonotal suture. Lateral postsutural vittae absent. Mediotergite (= postnotum) black (red-brown centrally). Scutellum yellow except for narrow fuscous basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1, *npl.* 2; *scp.* 2.

Legs. Femora dark red-brown to pale fuscous except dark fuscous to black on outer and ventral surfaces of fore femora, on inner surfaces of mid femora and around apical third of hind

femora; tibiae fuscous to dark fuscous; tarsi fulvous with apical four segments darker; mid tibiae each with an apical black spur.

Wing. Length 6.1 mm; cells bc and c fuscous; dense microtrichia covering all of both cells bc and c; remainder of wing colourless except fuscous cell sc, broad fuscous costal band confluent with R_{4+5} and widening markedly at apex of wing; narrow fuscous to pale fuscous anal streak present; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate oval; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. Tergum I dark orange-brown except for medial and lateral longitudinal broad black bands (the orange-brown surrounds the intersegmental line between terga I and II); tergum II black except for two large orange-brown spots posterocentrally either side of a medial longitudinal broad black band; terga III–V orange-brown except for a narrow medial longitudinal black band and two broad lateral longitudinal dark fuscous to black bands over all three terga and joining along anterior margin of tergum III. A pair of orange-brown oval shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Philippines (Luzon, Guimaras).

Hosts

No known record.

Comments

Dacus (Callantra) calirayae is similar to *D. (C.) discophorus*, *D. (C.) lagunae*, *D. (C.) leongi*, *D. (C.) nummularius* and *D. (C.) subsessilis* in possessing a broad costal band confluent with vein R_{4+5} and expanding distinctly at apex and possessing an anal streak. Further it is similar to *D. discophorus* and *D. nummularius* in having a medial longitudinal postsutural yellow vitta. *D. calirayae* differs from *D. lagunae*, *D. leongi* and *D. subsessilis* in having the basic colour of the scutum red-brown and possessing a medial postsutural vitta. It differs from *D. discophorus* and *D. nummularius* in having the medial postsutural vitta broad and triangular.

***Dacus (Callantra) conopsoides* de Meijere**

(Fig. 6)

Dacus conopsoides de Meijere, 1911: 378. Type locality: Depok, Java. Lectotype ♂ in BMNH.

Callantra conopsoides. – Hardy, 1977: 45.

Material examined

Indonesia: lectotype ♂ (here designated) and 1 ♀ paralectotype, Depok, Java, February 1908, E. Jacobsen (BMNH); 1 ♂ paralectotype, Depok, Java, October 1907 (ITZ); 1 ♂, Tengger Highlands, E. Java, 1100 m, v.1938, Nongkodjarjar (BMNH).

Description

Male

Head. Height 1.7 mm. Frons: length 1.1x breadth; fulvous; bristles: one fine black orbital; no frontals; lunule fulvous, 0.2 mm high. Ocellar triangle black. Vertex black. Face fulvous with medium-sized oval black spots in each antennal furrow, which are connected by a black line

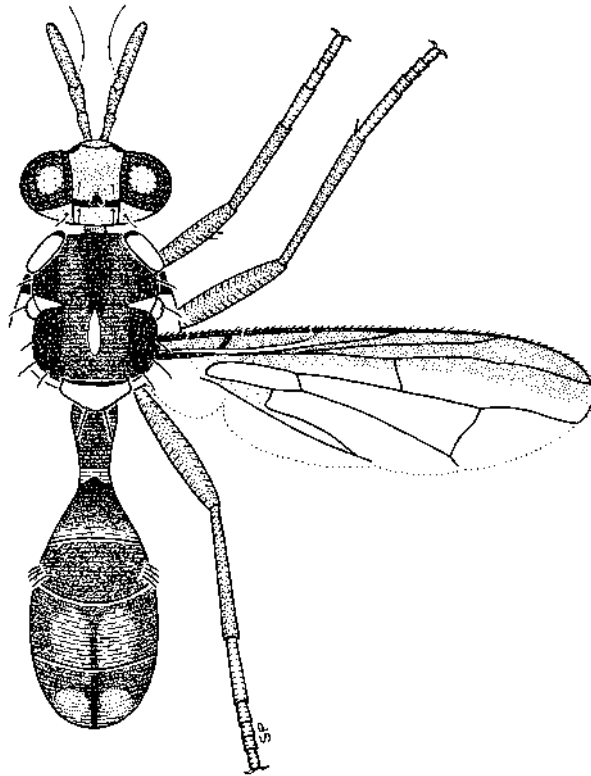


Fig. 6. *Dacus (Callantra) conopsoides* de Meijere, male.

across mouth opening; face 0.6 mm high. Fuscous spot on each parafacial adjacent to bases of antennae and connecting eye and ptilinal suture. Genae fulvous with ill-defined red-brown subocular spot; seta fine and red-brown. Occiput fulvous, paler along eye margins; occipital row of about 10 setae with a second outer row of more numerous finer setae. Antennae red-brown; arista black except pale basally; length of segments: 0.48 mm; 0.5 mm; 1.1 mm.

Thorax. Scutum red-brown with irregular fuscous streaks. Pleura fuscous except fulvous below postpronotal lobe. Yellow markings as follows: postpronotal lobes; notopleura; triangular marking extended along anterior side of mesonotal suture; narrow anepisternal stripe, equal in width to notopleuron and continued as a spot on the katepisternum; katatergite and anterior half of anatergite; a narrow medial longitudinal postsutural vitta from line of mesonotal suture to about two-thirds distance to the scutellum. No lateral postsutural vittae. Subscutellum fuscous. Mediotergite dark red-brown. Scutellum yellow except for narrow fuscous basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* absent (only fine hairs present).

Legs. Femora red-brown, except basal fifth of mid femur fulvous; fore femur with 2–4 (2 on right leg, 4 on left) stout ventral spines; tibia red-brown; mid tibia with a black apical spur; hind tibia with a pre-apical microtrichose hump.

Wing. 6.7–8 mm (lectotype 7.2 mm); cell bc and c fuscous; dense microtrichia covering cells bc and c (non type ♂ only microtrichose in apical half of bc); remainder of wing hyaline except fuscous cell sc and basal sections of br and a broad costal band that extends evenly over R₄₊₅ to about half-way to M; dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate and petiolate; terga fused; pecten present on tergum III. Tergum I about 2.5× as long as width at narrowest point. Terga I–III red-brown except for fulvous apices of terga I and II. Terga IV and V orange-brown with broad basal and lateral areas of red-brown and a narrow dark red-brown midline. Shining spots on tergum V orange-brown. Posterior lobes of surstylus short, sternum V with a slight v-shaped notch in centre of slightly concave posterior margin.

Female

As for male except pecten absent; no hump on hind tibiae; oviscapae short (not visible in dorsal view).

Attractant

No known record.

Distribution

Indonesia (Java).

Hosts

No known record.

Comments

Dacus (Callantra) conopsoides is similar to *D. (C.) wallacei* in having the costal band overlapping vein R_{4+5} and of uniform width, scutum basically red-brown and femora red-brown, with 2–4 ventral spines on fore femora. It differs from *D. wallacei* in possessing yellow on the anterior half of the anatergite (not entirely red-brown), a narrow medial longitudinal postsutural yellow vitta on the scutum and abdominal terga IV and V basically red-brown with orange-brown areas posteriorly either side of a narrow medial longitudinal (red-brown) band.

***Dacus (Callantra) crabroniformis* (Bezzi)**

(Fig. 7)

Monacrostichus crabroniformis Bezzi, 1914: 153–154. Type locality: Yercaud, India. Holotype ♂ in BMNH.

Mellessis crabroniformis. – Bezzi, 1916: 117.

Callantra crabroniformis. – Hardy, 1977: 45.

Dacus (Callantra) crabroniformis. – Kapoor, 1993: 83.

Material examined

India: holotype ♂, Shevaroy [Hills], Yercaud, 21.iv–4.v.[19]13, 4500 ft.

Description

Male

Head. Height 1.12 mm. Frons: length 1.35× as long as broad; fuscous, except fulvous transverse line anteriorly, small fulvous spot between frontals and large fulvous spot behind orbital; a few fine black setae on anteromedial hump; bristles black: 1 orbital; 2 frontals; lunule fuscous, becoming fulvous anteriorly, 0.26 mm high. Ocellar triangle and vertex black. Face largely shiny black from just above mouth to lower edge of antennal sockets, bordered laterally by fulvous; face 0.34 mm high. Genae fuscous below groove, fulvous above, except for large diffuse fuscous subocular spot; line of long black setae present. Occiput black except for fulvous along eye margins; occipital row of numerous very fine setae, 1 or 2 of which are black. Antenna with segments 1 and 2 fulvous, segment 3 fuscous; dorsal seta on segment 2 fine, arista black, pale basally; length of segments: 0.4 mm; 0.4 mm; 0.64 mm.

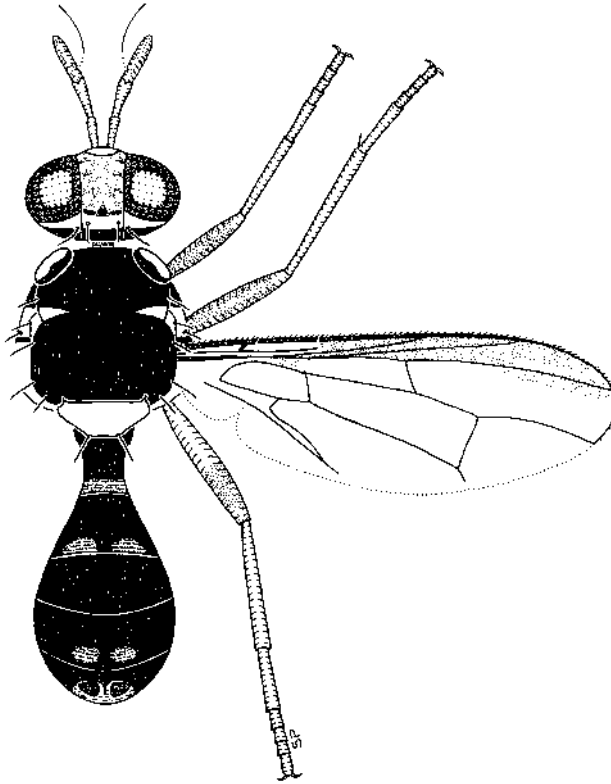


Fig. 7. *Dacus (Callantra) crabroniformis* (Bezzi), male.

Thorax. Scutum black. Pleura black except for some ill-defined dark red-brown to fuscous areas below postpronotal lobes and on posterior part of katepisternum. Yellow markings as follows: postpronotal lobe (except narrowly black along inner edge); notopleura; a wedge-shaped mark along anterior edge of mesonotal suture; narrow anepisternal stripe, barely wider than notopleuron and extended onto katepisternum as a small spot; katatergite (except posterior apex). Anatergite black except for trace of yellow on extreme anterior margin. No lateral or medial postsutural vittae. Subscutellum and mediotergite black. Scutellum yellow except for a broad black band over basal quarter. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora red-brown except basal two-thirds hind femora fulvous. Tibiae fulvous except apical half of hind tibiae darker. Tarsi fulvous with segments 3–5 tending darker. Mid tibiae each with a black apical spur. Hind tibiae lacking preapical microtrichose pad.

Wing. Length 4.8 mm; cells *bc* and *c* hyaline; cell *bc* and basal half of cell *c* lacking microtrichia; remainder of wing hyaline except for narrow part of cell *br* and cell *sc* which are fuscous, a deep fuscous costal band confluent with R_{4+5} and then expanding into a shallow spot (just before end of R_{2+3}) which extends one-quarter of way to vein *M*. No anal streak. No dense aggregation of microtrichia around A_1+CuA_2 . No supernumerary lobe.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten reduced to a line of fine soft hairs. Tergum I about 1.7x as long as width at narrowest part, black except for red-brown along intersegmental line between terga I and II. Tergum II black except for ill-defined apical red-brown areas on each side of midline. Tergum III black. Tergum IV black except for fulvous apical areas each side of midline. Tergum V black basally and laterally, fulvous apically, with

red-brown shining spots. Posterior lobe of surstylus short, sternum V with only a very slight concavity in posterior margin.

Attractant

No known record.

Distribution

Southern India (Tamil Nadu).

Hosts

No known record.

Comments

Dacus (Callantra) crabroniformis is similar to *D. (C.) satanas* in the characters listed in the comments on *D. satanas*. It differs in the mostly red-brown femora and dark inner edge to the postpronotal lobes.

Dacus (Callantra) discophorus (Hering)

(Fig. 8)

Callantra discophora Hering, 1956: 64. Type locality: Teldeniya, Sri Lanka. Holotype ♂ in NHMB.

Material examined

Sri Lanka: holotype ♂, Teldeniya, C.P., 16.xi.[19]53, F. Keiser (NHMB); 5♂, 1♀, Negombo, 19 & 27.xii.1995, ex *Dregea* (BMNH). **India:** 1♂, Karnataka, Chethalli (970 m), 15.x.1986, host *Ceiba* sp. [error; bred from vine growing on *Ceiba* (S. Ramani, personal communication)] (QDPI); 1♂, Bombay Presidency, Poona Ghats, 1888 (BMNH); 3♂, Kallar, 6.v.1925, C.K.S., coll. at clove oil (BMNH); 2♂, Kerala State, Walayar Forests, 700 ft, x.1959, P. Susai Nathan (RNHL); 1♂, Anamalar Hills, Chinchona, 1000 m, xi.1959, P. Susai Nathan (ITZ).

Description

Male

Head. Height 1.8 mm. Frons: length 1.3× breadth; dark red-brown, narrow fulvous laterally, dark fuscous on anteromedial hump; latter covered with a large number of short dark hairs; bristles black: 1 orbital; 2 frontals; lunule dark red-brown. Ocellar triangle black. Vertex dark red-brown. Face fulvous with two very large rectangular black spots covering antennal furrows; length 0.6 mm. Genae red-brown; dark fuscous seta present. Occiput red-brown, fulvous along eye margins; occipital row with 4 or 5 black setae. Antennae with segments 2 and 3 missing; segment 1 fulvous; length of segment 1: 0.56 mm.

Thorax. Scutum pale fuscous with a mottled appearance from sites of connection of dorsoventral flight muscles and no dark markings. Pleura pale fuscous, tending darker around margins of anepisternal stripe and paler below postpronotal lobe. Yellow markings as follows: notopleura; anepisternal stripe of medium width, reaching midway between anterior margin of notopleuron and anterior notopleural bristle dorsally, continuing to katepisternum as a transverse spot, anterior margin straight; broad triangular markings along anterior margins of mesonotal suture; a short narrow medial longitudinal postsutural vitta (often absent); anatergite (posterior apex pale fuscous); anterior three-fifths of katatergite (remainder including ventral margin pale fuscous). Postpronotal lobes brownish (narrowly yellow along ventral and posterior margins). Lateral postsutural vittae absent. Mediotergite red-brown. Scutellum yellow except for narrow pale fuscous basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Fore and mid femora and tibiae pale fuscous except narrow fulvous ring around base of mid femora; fore and mid tarsi fulvous; hind legs missing; mid tibiae with an apical black spur.

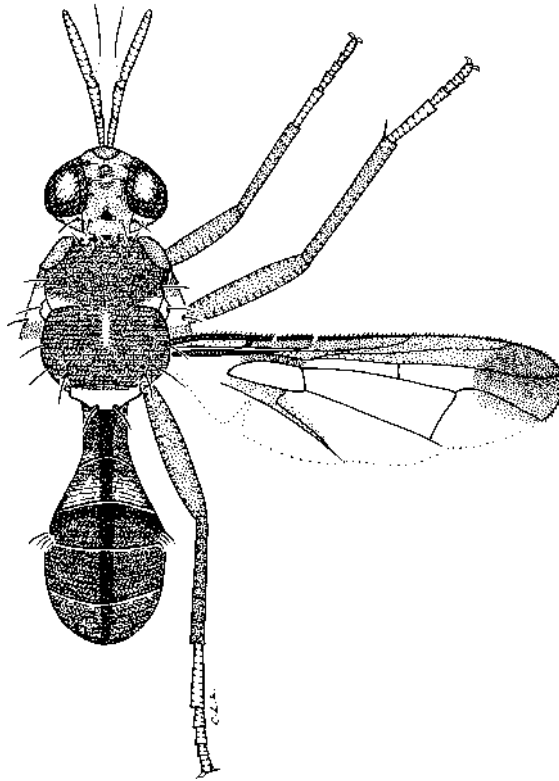


Fig. 8. *Dacus (Callantra) discophorus* (Hering), male.

Wing. Length 7.3 mm; cells bc and c fuscous; dense microtrichia covering all of cell c; remainder of wing colourless except fuscous cell sc, broad fuscous costal band confluent with R_{4+5} and expanding into a large round dark fuscous apical spot that overlaps M, pale fuscous within cell cup; a dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. Tergum I fuscous except for a narrow transverse fulvous band across posterior margin and a slightly darker fuscous medial longitudinal band; tergum II fuscous except for a large oval fulvous spot posteriorly each side of a dark fuscous medial longitudinal band; terga III–V fuscous, tending darker along anterior margin of tergum III and a dark fuscous to black medial longitudinal band. A pair of oval fuscous shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Clove oil; cue lure (weak response).

Distribution

Southern India and Sri Lanka.

Host

Bred from *Dregea voluobilis* (Asclepiadaceae) in Sri Lanka (K. Tsuruta, personal communication) and from an unidentified vine growing on *Ceiba* sp. in India.

Comments

Dacus (Callantra) discophorus is similar to *D. (C.) calirayae*, *D. (C.) lagunae*, *D. (C.) leongi*, *D. (C.) nummularius* and *D. (C.) subsessilis* in possessing a broad costal band confluent with vein R_{4+5} and expanding distinctly at apex. It differs from *D. lagunae*, *D. leongi* and *D. subsessilis* in having the ground colour of the scutum red-brown and with a medial longitudinal postsutural yellow vitta. *D. discophorus* differs from *D. calirayae* and *D. nummularius* in having brown postpronotal lobes, a narrower anepisternal stripe (ending midway between anterior margin of notopleuron and anterior notopleural bristle), abdominal terga III–V fuscous without dark lateral margins and with a medial longitudinal dark fuscous to black band over terga I–V.

Dacus (Callantra) esakii (Shiraki)

(Fig. 9)

Mellessis esakii Shiraki, 1939: 410. Type locality: Hikosan, Kyushu, Japan. Location of lectotype ♂ unknown (possibly NUT).

Callantra ihai Shiraki, 1968: 4–6, **syn. nov.** Type locality: Asahikawa, Okinawa, Japan. Holotype ♀ in NIAS.

Callantra esakii. – Ito, 1983: 6–7.

Material examined

Japan: colour slides (QDPI): lectotype ♂ (here designated), Hikosan (Buzen), Kyushu, 20.viii.1933, Teiso Esaki; paralectotype ♀, Ikiriki (Nagasaki), 28.ix.1920, Ishii.

*Description**Male*

Head. Frons: red-brown, tending fuscous centrally; bristles: 1 orbital; 2 frontals. Ocellar triangle black. Face fulvous with a black band across oral margin. Distinct large black spots between bases of antennae and eye margins. Antennae generally red-brown with fuscous on apex and outer surface of segment 3; *Callantra*-like with elongate segments I and II.

Thorax. Scutum red-brown to dark red-brown. Pleura red-brown without distinct dark markings. Yellow markings as follows: postpronotal lobe (sometimes tending brownish); notopleura; broad anepisternal stripe, reaching to postpronotal lobe dorsally, continuing to katapisternum as a small transverse spot, anterior margin straight; broad triangular markings along anterior margins of mesonotal suture with bases at notopleura; a triangular marking in centre of scutum; in some specimens, two narrow short lateral longitudinal vittae ending at level of *sa.* bristles; most of anatergite and katatergite. Scutellum yellow (tending fuscous in some specimens). Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* absent; *anepst.* 1; *npl.* 2.

Legs. Spines on ventral surfaces of fore femora; femora pale fuscous except fulvous at bases of mid and hind femora; tibiae paler fuscous; tarsi pale fuscous except basal segments fulvous; mid tibiae with an apical black spur.

Wing. Length 8.5–9.0 mm; cells bc and c fuscous; remainder of wing colourless except for fuscous to dark fuscous cell sc, broad costal band overlapping R_{4+5} with an erratic margin, mostly fuscous with irregularly shaped dark fuscous areas apically and below R_{4+5} near junction of that vein with r-m crossvein, a pale fuscous tint in cell cup.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Terga I and II fuscous with a narrow transverse fulvous band across posterior margin of tergum II; terga III–V generally fuscous tending red-brown centrally and with a narrow transverse dark fuscous to black band across anterior margin of tergum IV, transverse dark fuscous to black markings anterolaterally on tergum V (these are triangular in shape and widest on lateral margins of tergum), and a narrow medial longitudinal dark fuscous to black band on tergum V. A pair of oval red-brown to fuscous shining spots on tergum V.

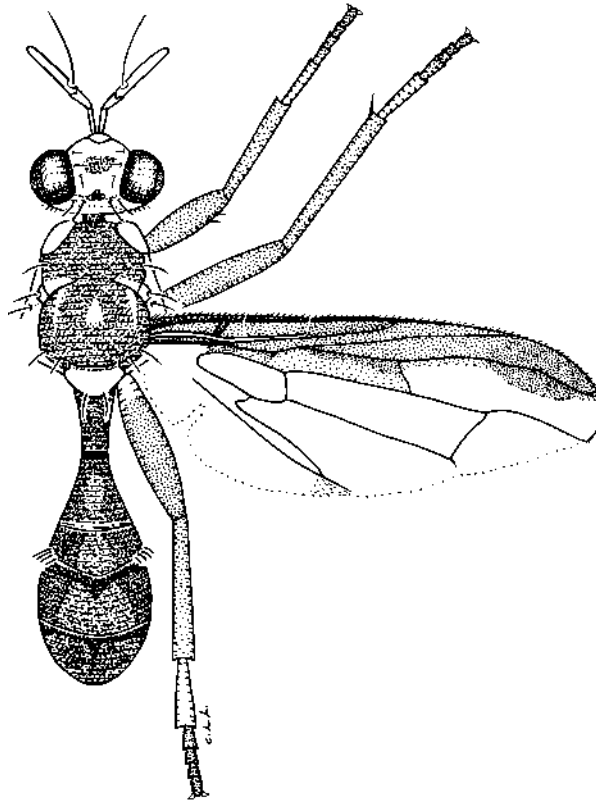


Fig. 9. *Dacus (Callantra) esakii* (Shiraki), male.

Attractant

No known record.

Distribution

Japan (Kyushu, Okinawa).

Host

Follicles of *Pycnostelma paniculatum* (= *chinense*) (Asclepiadaceae) (Ito 1983; Shiraki 1939).

Comments

This description is taken from colour slide photographs of the male lectotype and female paralectotype of *Dacus esakii*. Some characters are not visible on the photographs. *Dacus (C.) esakii* is similar to *D. (C.) bispinosus* and *D. (C.) polistiformis* in characters listed under the comments for *D. polistiformis*. It differs from these species in characters discussed under the comments of each.

In the original description, Shiraki (1939) did not designate a holotype. The male from Hikosan, Japan, was illustrated by the author and is hereby designated as the lectotype. The remaining specimen, a female from Ikiriki, Japan, becomes a paralectotype. The third specimen mentioned by Shiraki in the original description, a male from Taihoku, Taiwan, is a specimen of *D. (C.) bispinosus*.

In the two specimens from Japan, pins placed centrally through the scutum have obliterated the small central yellow spot.

Dacus (Callantra) feijeni White, sp. nov.

(Fig. 10)

*Material examined**Holotype.* ♂, Manchungan, Bhutan, 4.x.1991, H.R. Feijen (BMNH).*Paratype.* **Bhutan:** 1♂, Tashi, 26.x.1991, H.R. Feijen, attracted to Malathion bait spray (BMNH).*Description**Male*

Head. Height 1.6 mm. Frons: length 1.15× breadth; red-brown centrally, fulvous on lateral margins, small black spots around orbital bristles and dark fuscous on anteromedial hump; latter with a few small pale hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous. Ocellar triangle black. Vertex dark fuscous. Face fulvous with two medium-sized oval black spots; length 0.44 mm. Genae fulvous, large dark fuscous subocular spot present; seta absent. Occiput fuscous, fulvous along eye margins; occipital row with 3 or 4 black setae. Antennae with segment 1 red-brown, segments 2 and 3 fuscous to dark fuscous; arista black (red-brown basally); length of segments: 0.56 mm; 0.56 mm; 0.96 mm.

Thorax. Scutum dark red-brown. Pleura dark red-brown with broad black bands along anterior and posterior margins of anepisternal stripe and on dorsal part of katapisternum. Yellow markings as follows: postpronotal lobes (pale fuscous along anterior margins); notopleura; narrow anepisternal stripe equal in width to notopleura dorsally, extending to katapisternum as a small spot, anterior margin straight; yellow triangular band along anterior margin of mesonotal suture; anterior three-fifths of katatergite (remainder dark fuscous). Anatergite dark fuscous to black. Lateral and medial postsutural vittae absent. Mediotergite red-brown. Scutellum yellow except for broad dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Fore femora red-brown tending dark fuscous on outer surfaces, mid femora dark fuscous, hind femora fulvous on basal half and dark fuscous on remainder; fore and mid tibiae fuscous, hind tibiae dark fuscous; all tarsi with basal segment fulvous, apical segments fuscous; mid tibiae each with an apical black spur.

Wing. Length 7.0 mm; cells bc and c fuscous with dense microtrichia over all of cell c and outer half of cell bc; remainder of wing colourless except dark fuscous cell sc, broad dark fuscous costal band confluent with R₄₊₅ for a short distance and then overlapping this vein from a point just before r-m crossvein to wing apex; anal streak absent; dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate oval; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. Tergum I dark red-brown with dull black medial and lateral longitudinal bands; fulvous along intersegmental line between terga I and II; tergum II red-brown with dark fuscous along anterior and lateral margins; terga III–V red-brown except dark fuscous along anterior margin expanding to cover lateral margin of tergum III, diffuse dark fuscous laterally on tergum IV and on anterolateral corners of tergum V, a narrow medial longitudinal dark fuscous to black band over all three terga but ending well before posterior margin of tergum V. A pair of red-brown shining spots on tergum V. Posterior lobe of surstylus long, sternum V with a slight concavity on posterior margin.

Attractant

No known record.

Distribution

Bhutan.

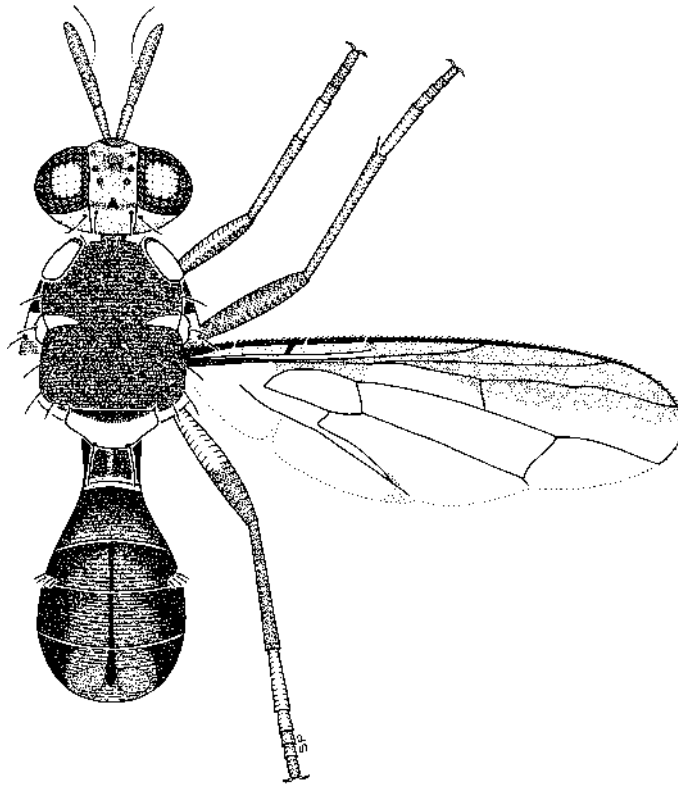


Fig. 10. *Dacus (Callantra) feijeni* White, sp. nov., male.

Hosts

No known record.

Comments

Dacus (Callantra) feijeni is similar to *D. (C.) siamensis*, *D. (C.) tenebrosus* and *D. (C.) vijaysegarani* in having a broad costal band overlapping vein R_{4+5} for most of its length and no postsutural yellow vittae on the scutum. *D. feijeni* differs from these species in having yellow postpronotal lobes, scutum dark red-brown, abdominal terga III–V and legs mostly red-brown to fuscous. *D. feijeni* is also similar to *D. (C.) insulosus* and *D. (C.) longicornis* in being an overall pale species (mostly red-brown). It differs from both species in having the costal band confluent with vein R_{4+5} basally and from *D. insulosus* in having the anatergite dark fuscous to black (not yellow).

This species is named after the collector, Dr H. R. Feijen.

Dacus (Callantra) formosanus (Tseng & Chu)

(Fig. 11)

Callantra formosana Tseng & Chu, 1983: 119–120, 122. Type locality: Paulei, Kaoshiung Hsien, Taiwan. Holotype ♂ in MEA.

Material examined

Taiwan: 1♂, Jiauliping, Chiayi, Itsien, 1.ix–1.x.1977, Y.H. Tseng, attracted to cue lure; 1♂, Wasna (900 m), 6.x.1978, Y.H. Tseng, attracted to cue lure, identified *Callantra formosana* by Y.H. Tseng; 1♂, Nanfeng, 27.xi.1978, Lena Lee Wen (all QDPI).

Description

Male

Head. Height 1.7 mm. Frons: length 1.44x breadth; fuscous to dark fuscous centrally, fulvous on lateral and ventral margins; dark fuscous around orbital bristles and on anteromedial hump; latter covered with a small number of short pale hairs; bristles black: 1 orbital; 2 frontals; lunule dark fuscous. Ocellar triangle black. Vertex dark fuscous. Face fuscous with a large dark fuscous to black spot dorsocentrally below bases of antennae and two large irregularly oval black spots in antennal furrows; length 0.52 mm. Genae fuscous, large dark fuscous subocular spot present; black seta present. Occiput black, yellow along eye margins; occipital row with a few weak dark setae. Antennae with segments 1 and 2 dark fuscous, segment 3 missing, strong black dorsal seta on segment 2; length of segments: 0.68 mm; 0.68 mm.

Thorax. Scutum black without pale markings. Pleura black without pale markings. Yellow markings as follows: postpronotal lobe (except inner posterior corner black); notopleura; narrow anepisternal stripe, equal in width to notopleura, not reaching to katepisternum, anterior margin straight; narrow triangular markings along anterior margins of mesonotal suture; anterior two-thirds of katatergite (remainder including broad ventral margin black). Postsutural vittae absent. Anatergite black. Mediotergite black. Scutellum yellow except for narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora dark fulvous, tending dark fuscous to black on basal half of fore and hind femora and basal third of mid femora; tibiae and tarsi entirely fulvous; mid tibiae with an apical black spur.

Wing. Length 7.8–8.1 mm; cells bc and c dark fuscous; dense microtrichia covering both cells; remainder of wing colourless or with a pale fuscous tint, except for dark fuscous cell sc, broad dark fuscous costal band confluent (or almost so) with M from base to r-m crossvein and overlapping R₄₊₅ with an irregular line (pattern) from r-m crossvein to wing apex, anal streak absent; dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Terga I and sterna I and II longer than wide. Tergum I dull black except dark red-brown laterally along intersegmental line between terga I and II; tergum II dark fuscous to dull black except dark red-brown across posterior margin but not reaching lateral margins; tergum III dark fuscous to dull black except for a small red-brown area posterocentrally; terga IV and V dark fuscous to dull black except for a large red-brown area posterocentrally on each tergum. A pair of oval shining spots on tergum V that are generally fuscous anteriorly. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Taiwan.

Hosts

No known record.

Comments

Three species of subgenus *Callantra* have been recorded from Taiwan, viz. *D. nummularius*, *D. bispinosus* and *D. formosanus*. *Dacus* (*C.*) *formosanus* is similar to *D. (C.) trimacula* in having abdominal terga III–V fuscous to black without a medial longitudinal dark vitta, the costal band broad and almost confluent with vein M basally, the anal streak absent, the anatergite fuscous and katatergite yellow. It differs from *D. trimacula* in having the scutum black and abdominal terga I and II mostly black. The posterior surstylus lobe of *D. formosanus* is short, not as illustrated in Fig. 7 of Tseng and Chu (1983).

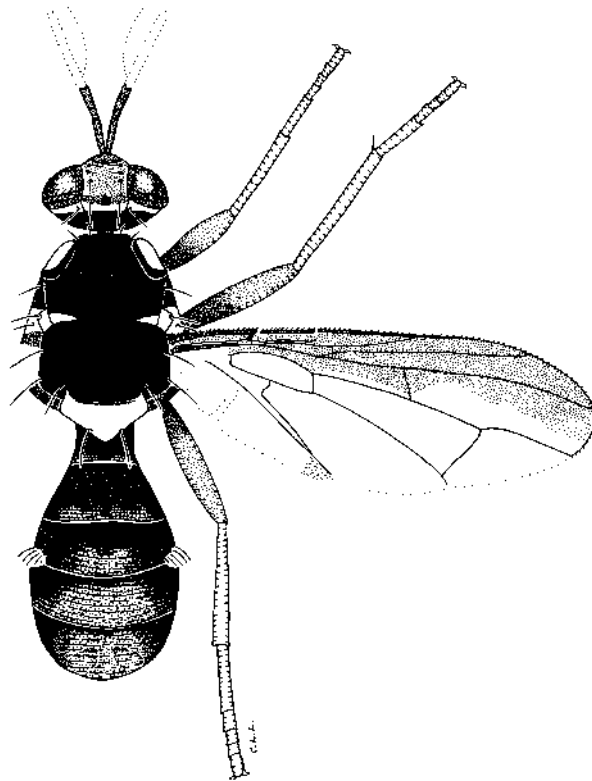


Fig. 11. *Dacus (Callantra) formosanus* (Tseng & Chu), male.

Dacus (Callantra) icariiformis (Enderlein)

(Fig. 12)

Callantra icariiformis Enderlein, 1920: 358. – Hardy, 1977: 45. Type locality: Sikkim, India. Lectotype ♂ in ZMB.

Dacus (Callantra) icariiformis. – Kapoor, 1993: 83.

Type material

The two ♂ syntypes from Sikkim were collected by Bingham. A syntype ♀ from Salween, Burma, collected by Bingham in January 1898, is not *D. icariiformis* but *D. longicornis*.

Material examined

India: lectotype ♂ (here designated), Sikkim, [Bingham] (ZMB); 1 ♀, 'Sikkim, F. Müller (per Lt.-Col. Bingham)', 'Burma:– Lt. Col. Bingham, BM 1896-281' (BMNH).

Description

Male

Head. Height 1.6 mm. Frons: length 1.2× width; red-brown except pale fuscous transverse midline across anteromedial hump; lectotype apparently lacking frontals and orbitals; lunule red-brown. Ocellar triangle and vertex black. Face fulvous with a small elongate black spot in each antennal furrow and a narrow trace of a black line across oral margin. Genae fulvous with ill-defined fuscous subocular spot. Occiput red-brown with yellow along eye margins; occipital row of 2–4 fine black setae. Antennae with segments 1 and 2 fulvous, segment 3 fuscous; arista black (pale basally); length of segments: 0.3 mm; 0.4 mm; 0.9 mm.

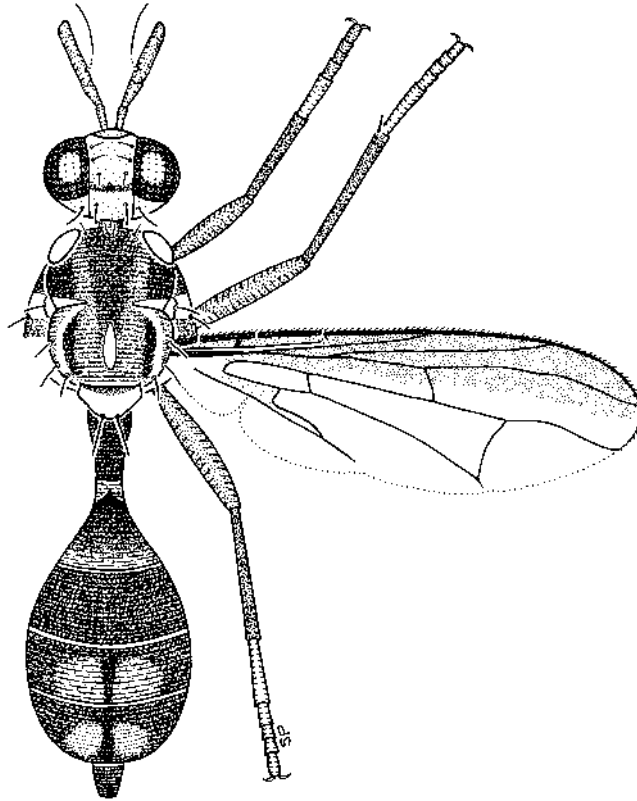


Fig. 12. *Dacus (Callantra) icariiformis* (Enderlein), female.

Thorax. Scutum red-brown with dark fuscous patterns. Pleural areas generally dark fuscous, except red-brown below postpronotal lobes. Yellow markings as follows: postpronotal lobe; trace of yellow spot lateral to postpronotal lobe; notopleura and wedge along mesonotal suture; anepisternal stripe barely wider than notopleuron and tapered to a point at join with katepisternum; katepisternum with a large transverse spot; narrow lateral postsutural vittae incurved anteriorly and ending posteriorly at intra-alar seta; medial vitta as an ill-defined spot; most of katatergite and lower half of anatergite. Subscutellum and mediotergite red-brown. Scutellum yellow with narrow fuscous basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* reduced to fine pale hairs.

Legs. Femora red-brown, fuscous beneath; hind femora pale over basal quarter; fore femora of lectotype with 1 or 2 stout ventral spines. Tibiae fulvous; tarsi fulvous; mid tibiae each with an apical black spur; hind tibiae without preapical pad.

Wing. Length 7.9 mm; cells *bc* and *c* fuscous; without microtrichia over cells *bc* and *c*; remainder of wing hyaline except fuscous cell *sc*, broad fuscous costal band which extends below R_{4+5} (about half-way to *M*) and not expanding into an apical spot. No anal streak. Without dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten absent. Tergum I about 3× as long as wide posteriorly (narrowest part); tergum II about as broad as long; sterna I and II longer than broad. Terga I and II dark red-brown, fulvous apically. Tergum III red-brown. Terga IV and V with fulvous spots in posterior two-thirds each side of midline. A pair of fulvous shining spots on tergum V. Sternum V with a slight concavity in posterior margin.

Female

As for male but lacking spines on fore femora and with a pair of fine orbitals present.

Attractant

No known record.

Distribution

North-east India (Sikkim).

Hosts

No known record.

Comments

Dacus (Callantra) icariiformis is similar to *D. (C.) vittatus* in possessing a broad costal band (confluent with or overlapping vein R_{4+5}), *sa.* bristles, lateral and medial postsutural yellow vittae. It differs from *D. vittatus* in having the costal band overlapping vein R_{4+5} throughout and the medial postsutural vitta short and posterior to the mesonotal suture. It is also very similar to *D. (C.) murphyi*, differing in having the costal band extending well below vein R_{4+5} throughout its length, not expanding apically.

Dacus (Callantra) indecorus (Hardy)

(Fig. 13)

Callantra indecora Hardy, 1974: 7–9; Hardy, 1977: 45. Type locality: Mayoyao, Ifugao, Luzon, Philippines. Holotype ♂ in BPBM; paratype ♂ in UZMH.

Material examined

Philippines: holotype ♂, Mayoyao, Ifugao, Mt Prov., Luzon, 1200–1500 m, 3.ix.1966, H.M. Torrevillas.

*Description**Male*

Head. Height 1.4 mm. Frons: length $1.37\times$ breadth; pale fulvous except dark fulvous on anteromedial hump; bristles black: 1 orbital; 2 frontals; lunule dark fulvous to red-brown, deep (not as much as *Dacus infernus*) and 0.2 mm high. Ocellar triangle black. Vertex black except for narrow red-brown gaps on either side of ocellar triangle. Face fulvous with two large facial spots that curve in at their lower ends, but separated across mouth opening by about their width; face 0.4 mm high. Genae fulvous with an ill-defined red-brown subocular spot; seta apparently absent. Occiput red-brown with yellow along eye margins, occipital row of 4–6 dark setae. Antennae with segment 1 fulvous; segment 2 red-brown with yellow at apex; weak brown dorsal seta on segment 2; length of segments: 0.42 mm; 0.46 mm; segment 3 missing.

Thorax. Scutum red-brown with a short lateral black stripe adjacent to the anterior supra-al ar seta and an irregular black stripe on each side of midline which is expanded laterally behind each postpronotal lobe. Pleura generally black except red-brown below postpronotal lobe and in posterior part of katepisternum. Yellow markings as follows: postpronotal lobe; notopleura; broad anepisternal stripe, reaching anterior notopleural seta dorsally, continuing to katepisternum, anterior margin straight; along anterior margin of mesonotal suture; anatergite (except posterior apex black), katatergite (except posterior area black). Without lateral and medial postsutural vittae. Mediotergite appears black laterally, but damaged in type. Scutellum yellow. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1 (socket only in type); *npl.* 2; *scp.* 4.

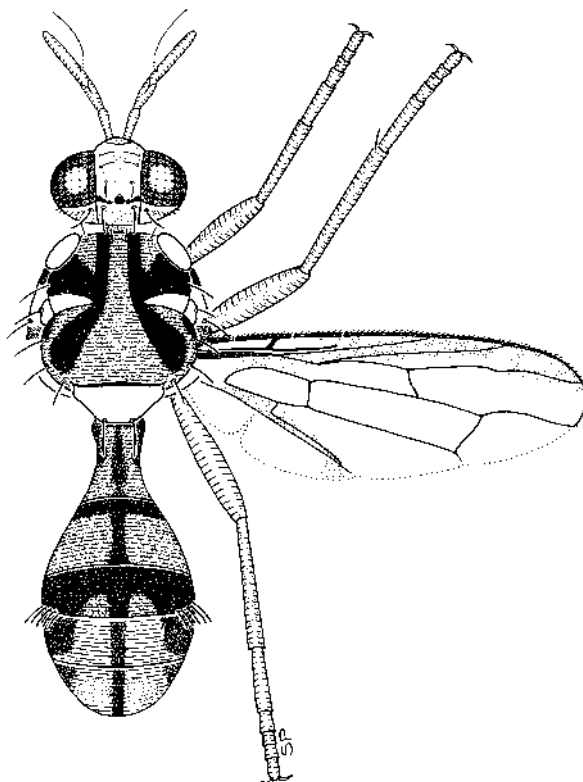


Fig. 13. *Dacus (Callantra) indecorus* (Hardy), male.

Legs. Femora red-brown except basal two-thirds of hind femora fulvous. Tibiae red-brown. Tarsi fulvous. Mid tibiae each with an apical black spur. Hind tibiae with a preapical microtrichose bulge.

Wing. Length 5.5 mm; cells bc and c with a pale fuscous tint; dense microtrichia covering both cells bc and c; remainder of wing hyaline except for fuscous cell sc, fuscous costal band overlapping R_{2+3} but not expanded at apex and only crossing R_{4+5} at its extremity; anal streak narrow and only extending outside of cell cup at base of cup extension; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I only slightly longer than wide. Tergum I red-brown with medial and lateral fuscous stripes; terga II and III red-brown with a dark fuscous basal band, medial and lateral longitudinal bands; terga IV and V fulvous with large sub-rectangular red-brown lateral marks and a fuscous medial longitudinal band; a pair of fulvous shining spots on tergum V. Posterior lobe of surstylus of medium development; sternum V with a shallow concavity on posterior margin.

Attractant

No known record.

Distribution

Philippines (Luzon).

Hosts

No known record.

Comments

Dacus (Callantra) indecorus is similar to *D. (C.) pedunculatus* in having a broad costal band overlapping vein R_{2+3} but not confluent with or overlapping vein R_{4+5} , cells bc and c possessing a pale fuscous tint, scutum red-brown with dark patterns and similar abdominal colour patterns. It differs from *D. pedunculatus* in having two distinct dark spots on the face, cell bc completely covered with microtrichia, the anal streak present and in lacking dark markings between the eye margins and antennal bases.

Dacus (Callantra) infernus (Hardy)

(Fig. 14)

Callantra inferna Hardy, 1973: 13–14; Hardy 1977: 45. Type locality: Ping R., nr Tak, Thailand.
Holotype ♀ in BPBM.

Material examined

Thailand: holotype ♀, Tak Province, area on W side of Ping R., opp. Tak, 110 m, 8.vii.1969, J.J.S. Burton.

*Description**Female*

Head. Height 1.4 mm. Frons: length 1.18× breadth; fulvous; anteromedial hump with many short black hairs; bristles black: 1 orbital; 2 frontals; lunule fulvous and very large (0.3 mm high). Ocellar triangle black. Vertex black. Face shallow, only as high as unusually high lunule (0.3 mm), fulvous, with a large slightly elongate black spot in each antennal furrow and a small black spot below antennal sockets. Genae yellow with well-defined fuscous subocular spot; black seta present. Occiput red-brown with fulvous along eye margins; occipital row with numerous small dark setulae. Antennae appear low on head because of unusual ratio of lunule to face height (1:1); segment 1 fulvous to red-brown, segments 2 and 3 red-brown; fine pale seta on segment 2; arista black, pale basally; length of segments: 0.5 mm; 0.46 mm; 0.78 mm.

Thorax. Dull black with ill-defined red-brown areas, three such areas between postpronotal lobes and a small area behind each yellow triangular sutural mark. Pleura generally black except fulvous below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; narrow anepisternal stripe, barely wider than notopleuron, continued as a small mark onto katepisternum; triangular mark along anterior side of mesonotal suture; anatergite (except posterior apex); katatergite (except posterior apex). Lateral postsutural vittae absent. Medial postsutural vitta from mesonotal suture almost to posterior margin of scutum which is narrow in anterior half (part obscured by pin) then abruptly widening to form a triangle with base about half as wide as scutellum. Subscutellum and mediotergite black laterally, red-brown centrally. Scutellum yellow. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora red-brown, except for ill-defined fulvous areas anteriorly in basal third of fore and mid femora and basal two-thirds of hind femora; tibiae dark red-brown to fuscous; tarsi with basal segment pale fulvous; mid tibiae each with an apical black spur.

Wing. Length 5.5 mm; cells bc and c pale fuscous with microtrichia throughout; remainder of wing hyaline except for fuscous cell sc, basal part of cell br, broad costal band extending below R_{4+5} (almost half way to M apically). No anal streak.

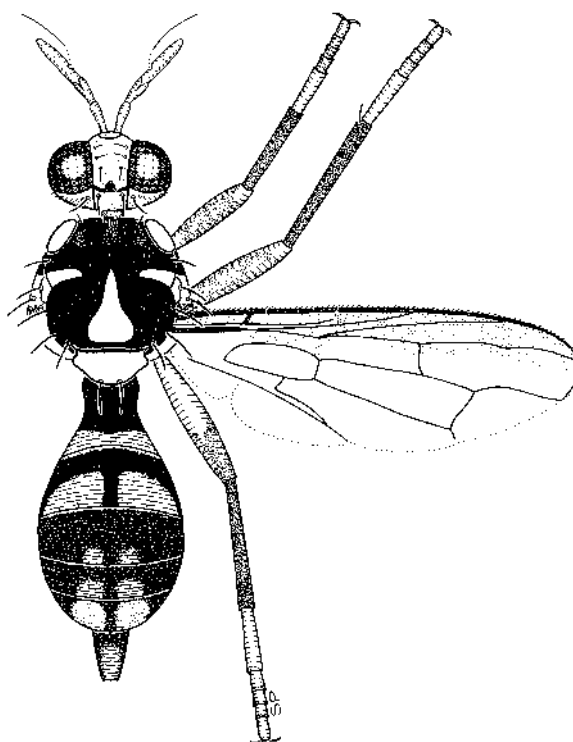


Fig. 14. *Dacus (Callantra) infernus* (Hardy), female.

Abdomen. Elongate, clavate, petiolate; terga fused. Tergum I about as long as wide. Tergum I black with transverse orange-brown band apically; tergum II orange-brown with a black transverse basal band that expands down sides, and a broad black medial stripe; terga III and IV mostly fuscous, except for small submedian orange-brown areas posteriorly; tergum V orange-brown with sub-rectangular fuscous areas anterolaterally and a narrow midline; a pair of oval orange-brown shining spots on tergum V. Oviscape a tapered cylinder; approximately as long as tergum V.

Attractant

No known record.

Distribution

Northern Thailand (Tak Province).

Hosts

No known record.

Comments

Dacus (Callantra) infernus is similar to *D. (C.) bannatus* in possessing a broad costal band overlapping vein R_{4+5} , anal streak absent and scutum black with a broad triangular postsutural yellow vitta. It differs from *D. bannatus* in having the postpronotal lobes yellow, costal band approximately even in width, legs mostly red-brown and abdominal terga III–V each with a pair of oval orange-brown spots postero-centrally each side of a dark midline.

Dacus (Callantra) insulosus Drew & Hancock, sp. nov.

(Fig. 15)

Material examined

Holotype. ♀, Port Blair, Andaman Is, India, 25.viii.1993, Veena Kumani; Sl. No. 36, bred ex Asclepiadaceae (BMNH).

Paratypes. **India (Andaman Is):** 3♀, same data as holotype (1♀, ANIC; 2♀, QDPI).

*Description**Female*

Head. Height 2.0 mm. Frons: length 1.4× breadth; red-brown with dark fuscous on anteromedial hump and around upper part of ptilinal suture; anteromedial hump covered with a large number of small black hairs; bristles black: 1 orbital; 2 frontals; lunule red-brown. Ocellar triangle black. Vertex fuscous to dark fuscous. Face red-brown with two small oval black spots in antennal furrows and a diffuse fuscous to dark fuscous spot dorsocentrally below bases of antennae; length 0.56 mm. Genae red-brown, small black subocular spot present; black seta present. Occiput red-brown; occipital row with a large number of weak black setae. Antennae with segments 1 and 2 red-brown, segment 3 fuscous; no strong dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.72 mm; 0.64 mm; 1.2 mm.

Thorax. Scutum red-brown without dark markings (three specimens have some erratic dark fuscous patterns but these may be due to damage in preservation). Pleura red-brown with dark fuscous to black along anterior margin and behind anepisternal stripe, on katepisternum and above hind coxae. Yellow markings as follows: postpronotal lobes; notopleura; a narrow triangle along anterior margin of mesonotal suture; anepisternal stripe of medium width reaching midway between anterior margin of notopleuron and anterior *npl.* bristle dorsally, not extending to katepisternum, anterior margin straight; anatergite (posterior apex black); anterior seven-eighths of katatergite (remainder black). Lateral and medial postsutural vittae absent. Mediotergite black except for a vertical medial red-brown band. Scutellum yellow except for a very narrow dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora red-brown except for dark fuscous apicoventrally on fore femora and along ventral margins of mid and hind femora; fore and mid tibiae red-brown, hind tibiae fuscous; tarsi with basal segments fulvous and apical four segments darker; mid tibiae each with an apical black spur.

Wing. Length 7.2 mm; cells bc and c dark fuscous; dense microtrichia covering all of cell c and outer half of cell bc; remainder of wing colourless except for a broad dark fuscous costal band overlapping R_{4+5} and not expanding at wing apex (in two specimens there is an elongate colourless spot within the costal band at the apex of cell r_{2+3}); anal streak absent but with a pale fuscous tint in base of cell cup; no dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate-oval and petiolate; terga fused; pecten absent on tergum III. Tergum I and sterna I and II longer than wide. All terga red-brown except fuscous to black markings as follows: anterocentrally on tergum II, narrow transverse bands across anterior margins of terga III–V, narrow lateral margins over terga II–V. A pair of oval red-brown shining spots on tergum V.

Attractant

No known record.

Distribution

India (Andaman Islands).

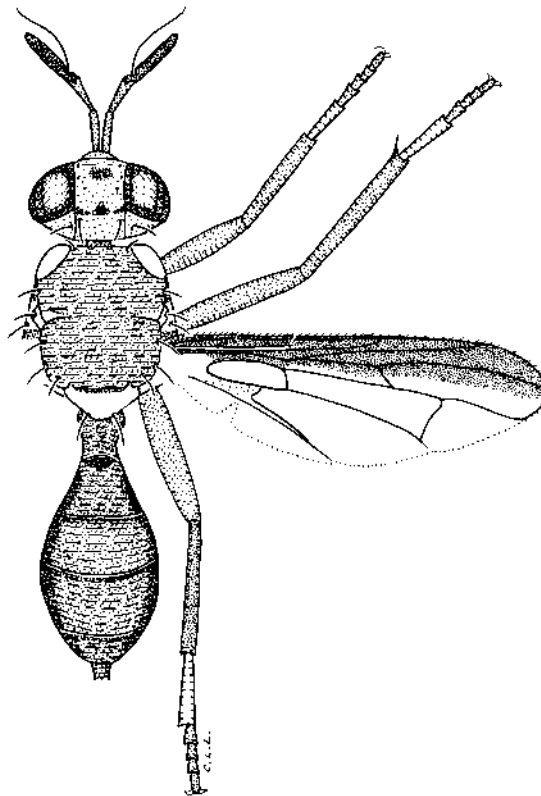


Fig. 15. *Dacus (Callantra) insulosus* Drew & Hancock, sp. nov., female.

Host

Undetermined species of Asclepiadaceae.

Comments

Dacus (Callantra) insulosus is similar to *D. (C.) longicornis* and *D. (C.) pullus* in having the costal band overlapping vein R_{4+5} throughout and postpronotal lobes yellow. It differs from *D. longicornis* in having an overall paler abdomen and the anatergite yellow. *D. insulosus* differs from *D. pullus* in having a red-brown scutum (not black) and abdominal terga mostly red-brown.

Dacus (Callantra) lagunae Drew & Hancock, sp. nov.

(Fig. 16)

Material examined

Holotype. ♂, Mt Makiling (300 m), Philippines, 15.vi.1983, B. Ramos, attracted to cue lure (BMNH).

Paratypes. **Philippines:** 1♂, Mt Makiling, 8.vi.1983, B. Ramos, attracted to cue lure; 1♂, Mt Makiling, Los Banos, 16.vi.1983, A.M. Arida, cue lure; 6♂, Mt Makiling (100 m), 8.vi.1983, B. Ramos, cue lure; 12♂, Mt Makiling (300 m), 8.vi.1983, 15.vi.1983, B. Ramos, cue lure; 5♂, Mt Makiling (400 m), 8.vi.1983, 15.vi.1983, B. Ramos, cue lure; 5♂, Mt Makiling (500 m), 9.v.1983, B. Ramos, cue lure. (6♂, ANIC; 8♂, BMNH; 16♂, QDPI.)

Description

Male

Head. Height 1.6–1.9 mm. Frons: length 1.69× breadth; red-brown except fulvous along lateral and ventral margins and fuscous around orbital bristles; anteromedial hump covered with

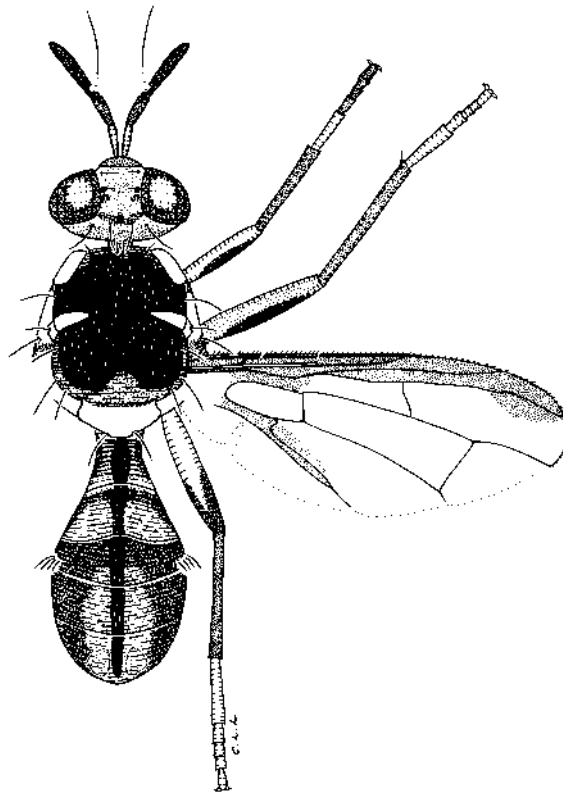


Fig. 16. *Dacus (Callantra) lagunae* Drew & Hancock, sp. nov., male.

a small number of short black hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous. Ocellar triangle black. Vertex fuscous to dark fuscous. Face fulvous with two medium-sized circular black spots usually joined by a black band along oral margin; length 0.56 mm. Genae fulvous, small dark fuscous subocular spot present; dark fuscous seta present. Occiput red-brown to dark fuscous with fulvous along eye margins; occipital row with 6–8 dark setae. Antennae with segment 1 fulvous, segments 2 and 3 dark fuscous; weak dark dorsal seta on segment 2; arista black (fulvous basally); length of segments: 0.64 mm; 0.64 mm; 1.24 mm.

Thorax. Scutum dull black with dark red-brown erratically along anterior and posterior margins, narrowly along lateral margins and, in some specimens only, between postpronotal lobes and notopleura. Pleura generally black except fuscous below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; broad anepisternal stripe, reaching almost to postpronotal lobe dorsally, continuing to katapisternum as a transverse spot, anterior margin slightly concave; broad triangular markings with bases at notopleura and running along anterior margins of mesonotal suture; anatergite (posterior apex dull black); anterior three-quarters of katatergite (remainder dull black). Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for a narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 3–4.

Legs. Femora red-brown except black along ventral margins of fore and mid femora and apical half of ventral margins of hind femora; fore tibiae fuscous, mid tibiae pale fuscous and hind tibiae dark fuscous; tarsi with basal segment fulvous and apical four segments pale fuscous; mid tibiae with an apical black spur.

Wing. Length 6.2–7.5 mm; cells bc and c fuscous; dense microtrichia covering both cells bc and c; remainder of wings with a pale fuscous tint across membrane except for fuscous cell

sc, broad fuscous costal band confluent with R_{4+5} and overlapping this vein apically, a narrow pale fuscous anal streak ending before wing margin; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sternum I and II longer than wide. Tergum I fulvous except for broad lateral and medial longitudinal black bands; tergum II black except for two large fulvous spots posteriorly either side of a broad medial longitudinal black band; terga III–V fulvous except for a broad medial and two broad lateral longitudinal black bands joining along anterior margin of tergum III. A pair of oval fulvous shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Philippines (Luzon).

Hosts

No known record.

Comments

Dacus (Callantra) lagunae is similar to *D. (C.) calirayae*, *D. (C.) discophorus*, *D. (C.) leongi*, *D. (C.) nummularius* and *D. (C.) subsessilis* in possessing a broad costal band confluent with vein R_{4+5} and expanding markedly at apex. It differs from *D. calirayae*, *D. discophorus* and *D. nummularius* in having the scutum ground colour black and lacking a medial longitudinal postsutural yellow vitta. *D. lagunae* differs from *D. leongi* in having a broader anepisternal stripe reaching almost to postpronotal lobe and face with two medium-sized circular black spots joined by a black band along oral margin. It differs from *D. subsessilis* in the same facial spot pattern, the wing with a distinct apical spot (not a diffuse pattern around the apical and hind margins) and with the broad lateral dark margins on abdominal terga III–V joined along base of tergum III.

Dacus (Callantra) leongi Drew & Hancock, sp. nov.

(Fig. 17)

Material examined

Holotype. ♂, Sg. Sui, coastal area, Sarawak, East Malaysia, 26.viii.1992, S. Leong, attracted to cue lure (BMNH).

Paratypes. **East Malaysia:** 1♂, same data as holotype; 19♂, Sg. Sui, nr. Kuching, Sarawak, 16.iii.1992, 23.iii.1992, 2.iv.1992, 12.vi.1992, S. Leong, cue lure; 14♂, Sg. Sui, Sarawak, 26.iii.1992, S. Leong, cue lure in starfruit plantation; 17♂, Sg. Sui, coastal area, nr. Kuching, 12.vi.1992, 18.vi.1992, 18.ix.1992, 25.ii.1993, 5.iii.1993, S. Leong, cue lure; 2♂, Tarat Agric Station, 16.x.1992, S. Leong, cue lure. (10♂, ANIC; 13♂, BMNH; 30♂, QDPI.)

Description

Male

Head. Height 1.75 mm. Frons: length 1.64× breadth; red-brown with pale fuscous to fuscous around orbital bristles and on anteromedial hump; latter with a few small dark hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous. Ocellar triangle black. Vertex dark fuscous to black. Face fulvous with large oval black spots pointed dorsally; length 0.44 mm. Genae fulvous, dark fuscous subocular spot present; black seta present. Occiput fuscous with

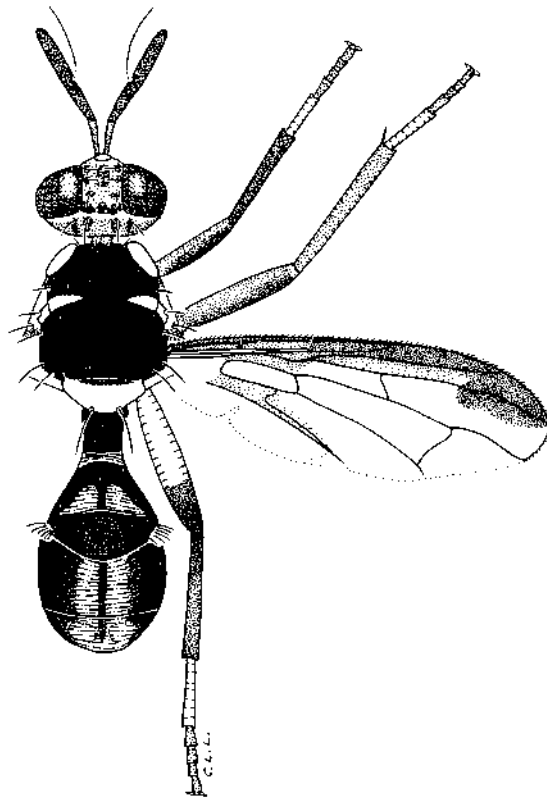


Fig. 17. *Dacus (Callantra) leongi* Drew & Hancock, sp. nov., male.

irregularly shaped dark fuscous to black patches dorsally, fulvous along eye margins; occipital row with a large number of weak setae. Antennae with segment 1 fuscous, segments 2 and 3 dark fuscous; no strong dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.6 mm; 0.6 mm; 1.12 mm.

Thorax. Scutum black without pale markings. Pleura black except dark fuscous below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; broad anepisternal stripe reaching to anterior *npl.* bristle dorsally, continuing onto katepisternum as a large transverse spot, anterior margin straight; a broad band along anterior margin of mesonotal suture; anatergite (posterior apex black); anterior two-thirds katatergite (remainder black). Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Fore femora red-brown except dark fuscous to black on outer and ventral surfaces, mid femora fuscous to dark fuscous except red-brown at each end, hind femora fulvous, tending dark fuscous to black on apical third; fore tibiae dark fuscous, mid tibiae fuscous, hind tibiae dark fuscous to black; tarsi fulvous with apical four segments darker; mid tibiae each with an apical black spur.

Wing. Length 6.8 mm; cells bc and c fuscous; dense microtrichia covering all of both cells; remainder of wing colourless except for dark fuscous cell sc, broad dark fuscous costal band confluent with R_{4+5} and markedly overlapping this vein apically; narrow fuscous to pale fuscous anal streak present; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. Terga I and II black except for fulvous along intersegmental line between these terga and two large fulvous spots posterocentrally on tergum II either side of a broad medial longitudinal black band; tergum III dark fuscous to black (occasionally with two small orange-brown spots posterocentrally); terga IV and V orange-brown except for a moderately broad medial longitudinal dark fuscous to black band ending before posterior margin of tergum V and two broad lateral longitudinal dark fuscous to black bands over both terga. A pair of oval orange-brown shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

East Malaysia (Sarawak).

Hosts

No known record.

Comments

Dacus (Callantra) leongi is similar to *D. (C.) calirayae*, *D. (C.) discophorus*, *D. (C.) lagunae*, *D. (C.) nummularius* and *D. (C.) subsessilis* in possessing a broad costal band confluent with vein R_{4+5} and expanding markedly at apex. *D. leongi* differs from *D. calirayae*, *D. discophorus* and *D. nummularius* in having the scutum ground colour black and lacking medial longitudinal postsutural yellow vitta. It differs from *D. lagunae* in having a narrower anepisternal stripe reaching to anterior notopleural bristle and by having two large oval black facial spots not joined along oral margin. It differs from *D. subsessilis* in having a distinct apical spot on the costal band (not a diffuse pattern around apical and hind margins) and by having abdominal tergum III mostly dark fuscous to black.

This species is named after Mr Stephen Leong, Department of Agriculture, Sarawak, Malaysia, in recognition of his contributions to the fruit fly field collecting programmes.

Dacus (Callantra) longicornis Wiedemann

(Fig. 18)

Dacus longicornis Wiedemann, 1830: 524. – de Meijere, 1911: 380; Bezzi, 1909: 292. Type locality: Java. Holotype ♀ in ZMUC.

Bactrocera vespoides Doleschall, 1859: 123. Type locality: Ambon, Indonesia. Holotype ♂ in ZMB.

Callantra smieroides Walker, 1860: 154. – Bezzi, 1916: 120 (as *smieroides*, lapsus); Hardy & Adachi, 1954: 151–152; Hardy, 1959: 162; Drew, 1973: 2–6; Hardy, 1977: 46; **syn. nov.** Type locality: Makassar, Sulawesi. Holotype ♂ in BMNH.

Dacus vespoides. – Bezzi, 1909: 262 (syn.).

Mellesis destillatoria Bezzi, 1916: 118; **syn. nov.** Type locality: Bhamo, Burma. Holotype ♀ in MSNM.

Mellesis eumenoides Bezzi, 1916: 119; **syn. nov.** Type locality: Tatkon, Burma. Lectotype ♂ in BMNH.

Mellesis bioculata Bezzi, 1919: 437; **syn. nov.** Type locality: Mt Makiling, Luzon, Philippines. Lectotype ♂ in MSNM.

Callantra vespoides. – Enderlein, 1920: 358; Hardy & Adachi, 1954: 169; Hardy, 1977: 46 (as syn.).

Dacus (Callantra) smieroides. – Malloch, 1939: 411–412; Drew, 1989: 248–249; White & Elson-Harris, 1994: 317.

Callantra destillatoria. – Hardy, 1973: 9; Hardy, 1977: 45.

Callantra eumenoides. – Hardy, 1973: 11; Hardy, 1977: 45.

Callantra bioculata. – Hardy, 1974: 6–7; Hardy, 1977: 45.

Callantra longicornis. – Hardy, 1977: 45–46.

Callantra unifasciatus Hardy, 1982: 184–186; **syn. nov.** Type locality: Wotu, Sulawesi. Holotype ♂ in MBB.

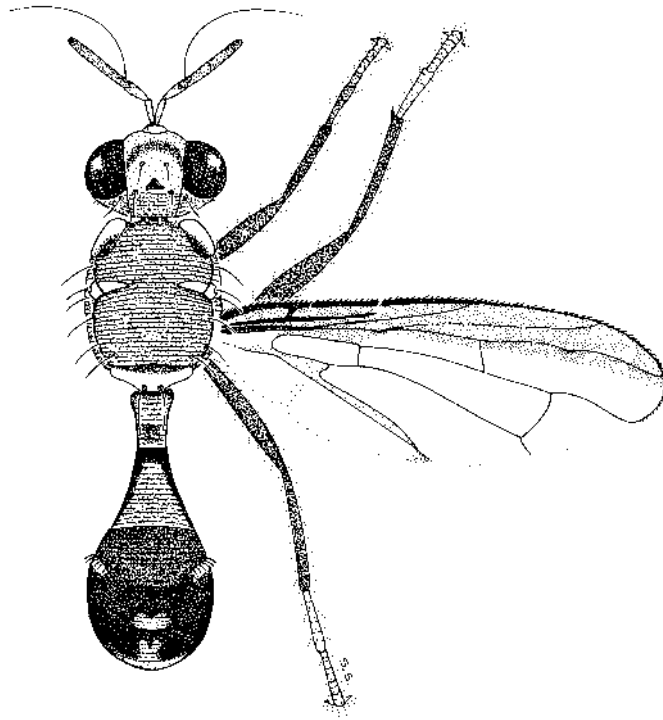


Fig. 18. *Dacus (Callantra) longicornis* Wiedemann, male.

Callantra variegata Wang, 1990: 73, 76; **syn. nov.** Type locality: Daimonglong, Yunnan, China.

Holotype ♂ in ASB.

Dacus (Callantra) variegata. – Liang *et al.*, 1993: 139.

Dacus (Callantra) eumenoides. – Kapoor, 1993: 83.

Location of types

The types of *D. longicornis* and *B. vespoides* were supposedly in the Naturhistorisches Museum, Vienna (Bezzi 1909), but were not amongst the material reported by Hardy (1968) and have been located in ZMUC (*D. longicornis*) and ZMB (*B. vespoides*). The type of *D. smieroides* appears to be the male in BMNH labelled by Walker, not a female as originally stated.

Material examined

Indonesia: Ambon: holotype ♂ of *Bactrocera vespoides* (ZMB); Bali: 2♂, Gilimanuk (0–25 m), 8.vii.1981, J. Turner, attracted to cue lure (QDPI); Java: holotype ♀ of *D. longicornis* (ZMUC); 4♂, Wonosari (200 m), Yogyakarta, 23.v.1981, J. Turner, cue lure (QDPI); Sulawesi: holotype ♂ of *D. smieroides*, Macassar, Celebes, A.R. Wallace (BMNH); holotype ♂ of *D. unifasciatus*, Wotu, viii.1975, N. Gough (MBB); 4♂, Bengo Forest, nr Ujung Pandang, 26.vii.1981, J. Turner, cue lure; 2♂, Bantimurungi (50 m), 40 km NW of Ujung Pandang, 27.vii.1981, J. Turner, cue lure; 6♂, Bententingi (850–1000 m), 5 km W of Malino, 27.vii.1981, J. Turner, cue lure; 1♂, Lamona (20 m), 12 km S of Palopo, 23.vii.1981, J. Turner, cue lure; 1♂, Latupa (100 m), 9 km W of Palopo, 23.vii.1981, J. Turner, cue lure; 7♂, Sangbua (20–50 m), 17 km S of Palopo, 23.vii.1981, J. Turner, cue lure; 2♂, Dumoga (212 m), Taraut, 21.xii.1985, Santianawati, cue lure; Sumbawa: 5♂, Kanar, 12.vi.1981, J. Turner, cue lure; 2♂, Semamung and Kerang (100 m), 13.vi.1981, J. Turner, cue lure; 6♂, Semongkat (250–350 m), 12.vi.1981, J. Turner, cue lure; 5♂, Surading, 12.vi.1981, J. Turner, cue lure; 6♂, Tiamera and Brangrea (100–150 m), 13.vi.1981, J. Turner, cue lure; Lombok: 1♂, Sasaot (400–550 m), 31.v.1981, J. Turner, old plantation – mahogany, cue lure (all QDPI). **Brunei:** 1♂, Lumapas Agriculture Stn, 7.ix.1981, Asman, ex *Luffa acutangula* (BMNH). **East Malaysia:** Sarawak: 1♂, Tarat Agriculture Station, nr. Kuching, 22.iv.1992, S. Leong, cue lure; 6♀, 13♂,

Ng. Ibah Kapit, Rh. Mujah, 4.viii.1993, S. Leong, bred from Buah Impusut [*Luffa cylindrica*] (Cucurbitaceae), ACIAR sample No. K992 (all QDPI). **Peninsular Malaysia:** 18♂, TN 2, 30.vi.1986, 14.vii.1986, 28.vii.1986, 11.viii.1986, 25.viii.1986, Yusoff Salleh, cue lure; 13♂, TN 6, 30.vi.1986, 14.vii.1986, 28.vii.1986, 11.viii.1986, 25.viii.1986, Yusoff Salleh, cue lure; 1♂, TN 9, 25.viii.1986, Yusoff Salleh, cue lure; 2♂, TN 13, 30.vi.1986, Ahmad Radzuan and Panjang Abdullah; 3♂, TN 13, 28.vii.1986, 11.viii.1986, Yusoff Salleh, cue lure; 2♂, TN 14, 11.viii.1986, Yusoff Salleh, cue lure; 1♂, TN 14, 8.ix.1986, Ahmad Radzuan and Panjang Abdullah, cue lure; 1♂, TN 15, 28.vii.1986, Ahmad Radzuan and Panjang Abdullah; 1♂, TS 8, 12.i.1987, Mahadzir, cue lure; 1♂, TS 10, 8.ix.1986, Mohadzir, cue lure; 1♂, TS Bentong, 25.ii.1986, Antony; 1♂, TS Gombak, 12.ii.1986, Mahadzir, cue lure; 1♂, TS Karak, 25.ii.1986, cue lure; 1♂, Gombak 19.v.1986, S. Vijaysegaran, cue lure; 1♂, R.S. Gajah Mati, 19.v.1986, Suliman Desa, cue lure; 1♂, Segamat, 18.i.1986, Ooi Chee Seng, cue lure (all QDPI). **Thailand:** Central District: 2♂, Yang Pong Rat, Chanthaburi, 8.vii.1991, 21.i.1992, Montree; Chiang Mai: 12♂, guava orchard, 29.viii.1991, 11.ix.1991, 19.ix.1991, 31.x.1991, 15.xi.1991, Chantane, cue lure; 1♂, Chiang Mai, 13.vi.1991, Chantane *et al.*, cue lure in guava orchard; 4♂, Longan orchard, 13.x.1991, 25.vi.1992, 23.vii.1992, Chantane, cue lure; 3♂, Doi Pui NP, 13.vi.1991, 31.x.1991, Chantane *et al.*, cue lure; 1♂, Doi Suthep–Pui National Park (1100 m), 12.v.1991, D. Hancock, cue lure; 2♂, Doi Pui, 11.vi.1992, Chantane, cue lure; 1♂, Mae Hae, 5.xi.1992, Chantane, cue lure; 23♂, NRDC, 11.vi.1991, 25.vi.1991, 2.vii.1991, 16.vii.1991, 27.ix.1991, 30.x.1991, 12.xi.1991, 27.xi.1991, 16.i.1992, 23.vi.1992, 13.vii.1992, Chantane, cue lure; 6♀, 9♂, Hoy Ekang, 5.xi.1991, Chantane, bred ex *Luffa cylindrica*; 10♀, 7♂, Hang Dong, 22.viii.1992, Chantane, bred from *Luffa cylindrica*; 3♀, 8♂, Tet Yoa, 8.ix.1993, Chantane, bred from *Melothria wallichii*; 2♀, 1♂, Muang, 31.x.1991, Chantane, bred from *Melothria wallichii*; 18♀, 4♂, Mae Mood, 8.ix.1992, Chantane, bred from *Trichosanthes cucumerina*; Chiang Rai: 1♂, Mae Sai, 10.vi.1991, Charuwan, cue lure; 2♂, Chiang San, 9.ix.1991, 10.x.1991, Charuwan, cue lure; 1♂, Pa Yao, 26.vi.1991, Charuwan Supasatien, cue lure; 1♂, Khun Khon, 25.vi.1992, Charuwan, cue lure; 2♂, Amphur Muang, 1.ix.1992, Charuwan, cue lure; 1♂, Amphur Muang, 3.xi.1992, Charuwan, bred from *Luffa cylindrica*; Songkhla: 8♀, 7♂, Ya Rung, Patthani, 20.ii.1992, Anuchit *et al.*, bred from *Luffa cylindrica*; 3♀, 5♂, Wat Koo Ha Phi Moor, Yala, 20.ii.1992, Surakrai *et al.*, bred from *Luffa cylindrica*; 1♀, 3♂, Than To Research Stn, Yala, 10.vii.1992, Anuchit *et al.*, bred from *Luffa cylindrica*; 4♀, 3♂, Than To Rubber Research Stn, Yala, 24.vii.1992, Sieng *et al.*, bred from *Luffa cylindrica*; Surat Thani: 1♂, Khainsa, 13.vii.1991, Pichate, cue lure; 1♂, Khain Sa, 22.vii.1991, Pichate, cue lure; 1♂, Tha-u-Tae, 22.vii.1991, Pichate, cue lure; 5♂, Tha-u-Tae, Kamchanadit, 26.xi.1991, Pichate, cue lure; 1♂, Chumporn Horticulture Research Centre, Chumporn, 27.i.1992, Pichate, cue lure (all QDPI). **Myanmar (Burma):** lectotype ♂ of *D. eumenoides*, Tatkon, Upper Burma, 6–7.ix.1914, K.D. Shroff, from larvae in fruit of *Trichosanthes cucumerina*, hatched 20–21.ix.14 (BMNH). **China:** Holotype ♂ of *D. variegata*, Daimonglong, Yunnan Province, 7.iv.1958 (ASB); allotype ♀, 3♂ paratypes of *D. variegata*, Xishuangbanna, Yunnan, 16.viii.1957, 22.iii.1957, 12.v.1958, 30.v.1958 (ASB). **Bhutan:** 1♂, Tatapari, Gaylegphug, 300 m, 14.ix.1990, Feijen & Dorji (BMNH); 1♂, Bhur, Ganglephug, 13.ix.1990, H.R. Feijen (BMNH).

Diagnosis

See Drew (1989) for full description under *D. (Callantra) smieroides*. Large species; face with a pair of medium-sized circular to subquadrate black spots; postpronotal lobes yellow (posterodorsal corners fuscous in some specimens); notopleura yellow; scutum red-brown without dark patterns; lateral postsutural vittae absent; scutellum yellow with a broad fuscous basal band; anepisternal stripe narrow (slightly wider than notopleura); yellow triangle extending from notopleura along anterior margin of mesonotal suture; anatergite fuscous; katatergite mostly yellow; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* 1, *anepst.* 1, *npl.* 2, *scp.* 4; wing with cells bc and c fuscous and covered with dense microtrichia, a broad fuscous costal band overlapping R₄₊₅ and often with a darker patch apically, anal streak present but pale; abdomen strongly petiolate, terga III–V dark fuscous to black with a large orange-brown spot posterocentrally on tergum IV and a medial longitudinal orange-brown band on tergum V expanding along posterior margin of that tergum; pecten present on tergum III.

Attractant

Cue lure.

Distribution

Indonesia (Ambon, Bali, Java, Lombok, Sulawesi, Sumbawa); Brunei; East and Peninsular Malaysia; Thailand; Myanmar; Laos; China (Yunnan Province); Bhutan; Philippines (Luzon).

Hosts

Luffa cylindrica, *Luffa acutangula*, *Melothria wallichii*, *Trichosanthes cucumerina* (all Cucurbitaceae).

Comments

Dacus (*Callantra*) *longicornis* is a widespread species throughout South-east Asia and one that has been regularly misidentified. It is the only *Dacus* species of non-African origin that could be considered economic and in most of the literature is referred to as *D. smieroides* (Walker). Bezzi's (1909) synonymy of *D. longicornis* and *B. vespoides* has been confirmed from examination of their types. There are two forms of *D. longicornis*, one with and one without a small medial postsutural vitta. It possesses a broad costal band overlapping vein R_{4+5} , cells bc and c fuscous, scutum red-brown, face with a pair of black spots, anepisternal stripe narrow, anatergite fuscous, postpronotal lobes yellow with inner posterior corners fuscous and lacks fore femoral spines and a distinct round spot at wing apex. These characters differentiate it from the similarly patterned species *D. (C.) conopsoides*, *D. (C.) insulosus* and *D. (C.) trimacula*.

Reports of fore femoral spines in *D. longicornis* (Bezzi 1919; Hardy 1970) and *D. bioculata* (Hardy 1970, 1974) are errors. A specimen from Ambon, recorded as *Callantra longicornis* by Hardy and Adachi (1954), is *D. wallacei*.

Dacus (*Callantra*) *maculipterus* White, sp. nov.

(Fig. 19)

Material examined

Holotype. ♂, near Ban Sap Bon, 3 km E of Sara Buri, Thailand, 4.x.1975, R. Kano (BPBM).

*Description**Male*

Head. Height 1.44 mm. Frons: 1.31× as long as wide; fuscous with fulvous behind lunule and a fulvous spot behind each seta; anteromedial hump with numerous fine black hairs; bristles black: 1 orbital; 2 frontals; lunule fulvous; 0.3 mm high; ocellar triangle and vertex black. Face yellow with a large elongate black spot in each antennal furrow joined across mouth by a broad fuscous line; a black heart-shaped spot below antenna bases. Parafacials fuscous. Genae red-brown with fuscous subocular spot; black seta present. Occiput dark fuscous to black with fulvous along eye margins; occipital row with a large number of weak black setae. Antenna with segment 1 fulvous; segments 2 and 3 fuscous; no strong seta on segment 2; arista black, pale basally; length of segments: 0.5 mm; 0.5 mm; 0.9 mm.

Thorax. Scutum black. Pleura black, except irregularly fuscous below postpronotal lobe and in posterior area of katapisternum. Yellow markings as follows: postpronotal lobe (fulvous posteriorly, but may be due to shrinkage of internal tissues); notopleura; triangular marking along anterior side of mesonotal suture; narrow anepisternal stripe, only as wide as notopleuron and barely extended onto katapisternum; anatergite (lower half only); katatergite (except posterior third). Subscutellum and mediotergite black. Scutellum yellow except for narrow dark basal band. Seta: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *npl.* 2; *scp.* 4 (well developed).

Legs. Femora dark red-brown to fuscous except basal quarter of hind femora fulvous. Tibiae dark red-brown to fuscous; mid tibiae each with an apical black spur; hind tibiae each with a prominent preapical microtrichose bulge. Tarsi with first segment fulvous, remainder fuscous.

Wing. Length 5.8 mm; cells bc and c hyaline; most of cell c with microtrichia at least along whole anterior region; remainder of wing hyaline except fuscous narrow part of cell br, fuscous cell sc, a broad fuscous costal band confluent with R_{4+5} and widening to overlap this vein at a

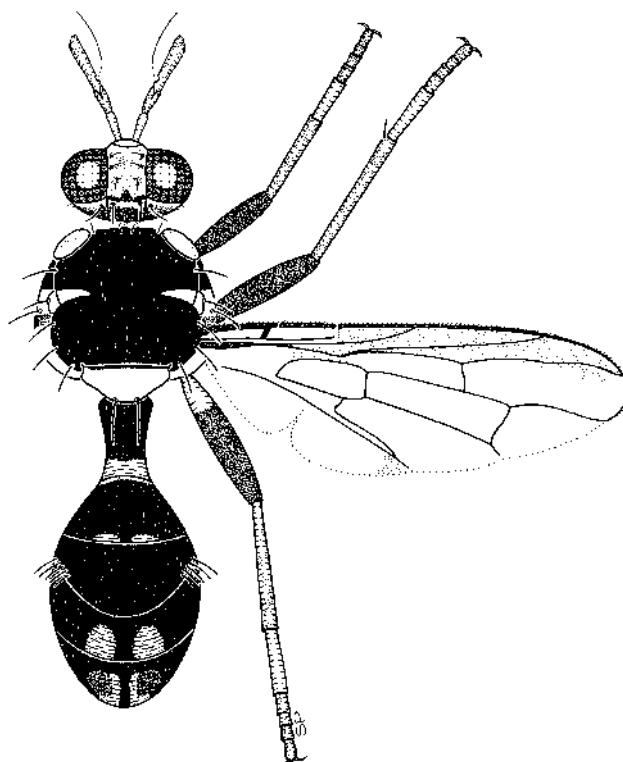


Fig. 19. *Dacus (Callantra) maculipterus* White, sp. nov., female.

point just before apex of vein R_{2+3} and extending over one-third of cell r_{4+5} . No anal streak. Dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I about 1.4× as long as width at narrowest part. Tergum I black except fulvous along intersegmental line between terga I and II. Tergum II black except for a shallow transverse fulvous mark each side of centre on posterior margin. Tergum III black. Terga IV and V black anteriorly, laterally and along midline with orange-brown posteriorly either side of midline. A pair of fuscous shining spots on tergum V. Posterior lobe of surstylus of medium development, sternum V with barely any concavity on posterior margin.

Attractant

No known record.

Distribution

Central Thailand.

Hosts

No known record.

Comments

Dacus (Callantra) maculipterus is similar to *D. (C.) atrimarginatus*, *D. (C.) crabroniformis*, *D. (C.) ramanii*, *D. (C.) satanas* and *D. (C.) sinensis* in characters discussed under the comments on *D. atrimarginatus*. It differs from *D. atrimarginatus* in having dark legs and from *D. crabroniformis*, *D. ramanii*, *D. satanas* and *D. sinensis* in having abdominal terga IV and V with pale areas posteriorly either side of a medial longitudinal dark band.

Dacus (Callantra) murphyi White, sp. nov.

(Fig. 20)

*Material examined**Holotype.* ♀, Bukit Timah Forest, Singapore, 1.v.1979, D.H. Murphy (NUS).*Description**Female*

Head. Height 1.56 mm. Frons 1.28× as long as wide; fulvous with fuscous band across centre; anteromedial hump with a few black hairs; bristles black: 1 orbital; 2 frontals. Lunule fulvous, 0.2 mm high. Ocellar triangle and vertex black. Face fulvous with a medium-sized spot in each antennal furrow and a fuscous line across mouth which is narrowly joined to the spots. Parafacials fulvous with a fuscous spot each side between eye and antenna base. Genae fulvous with a fuscous subocular spot; dark seta present. Occiput fulvous; occipital row of 2 irregular lines of small black setae. Antennae with segments 1 and 2 fulvous, segment 3 fuscous; no strong seta on segment 2; arista black, pale basally; lengths of segments: 0.4 mm; 0.5 mm; 0.9 mm.

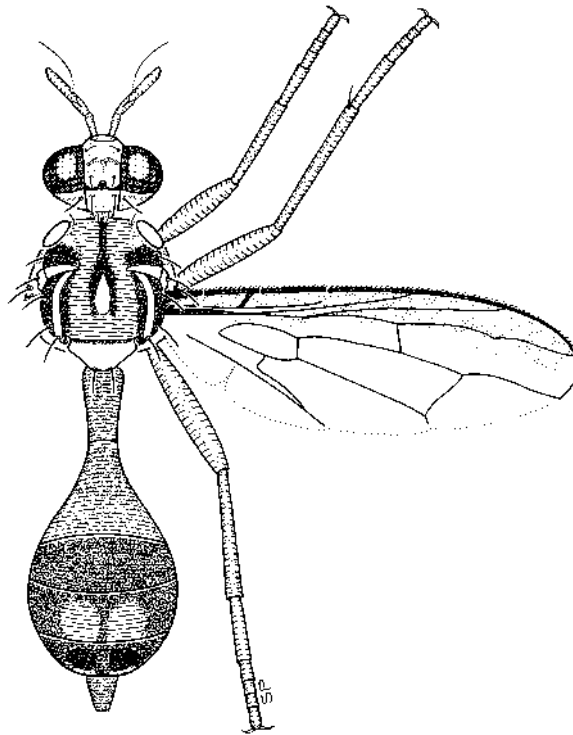


Fig. 20. *Dacus (Callantra) murphyi* White, sp. nov., male.

Thorax. Scutum red-brown with irregular fuscous marks. Pleurae red-brown except fulvous below postpronotal lobe. Yellow markings as follows: postpronotal lobe; a spot inside postpronotal lobe; notopleura; wedge along anterior margin of mesonotal suture; anepisternal stripe of medium width, not reaching anterior notopleural seta and tapered to a point above katapisternum; very broad transverse mark across upper edge of katapisternum; a pair of elongate, narrow lateral postsutural vittae ending behind *ia.* bristle; a short medial postsutural vitta tapering anteriorly to end at line of mesonotal suture; most of both anatergite and katatergite. Subscutellum and mediotergite red-brown. Scutellum yellow except for dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *npl.* 2; *scp.* 4 (in type, central pair with one behind the other).

Legs. Femora pale red-brown except basal fifth of mid and basal seventh of hind fulvous. Tibiae red-brown; mid tibiae each with an apical black spur. Tarsal segment 1 fulvous, remainder slightly darker.

Wing. Length 7.5 mm; cells bc and c fuscous; cell c with microtrichia; cell bc without microtrichia; remainder of wing hyaline except for fuscous cell sc, fuscous costal band just extending over R₄₊₅ basally and gradually expanding further beyond apex of R₁ but not into a distinct spot. No anal streak.

Abdomen. Elongate, clavate and petiolate; terga fused. Tergum I red-brown and 3× as long as width at narrowest part. Tergum II red-brown, except fulvous anterolaterally and across apical third. Tergum III red-brown. Tergum IV red-brown basally, laterally and along midline, leaving a pair of fulvous spots posteriorly each side of midline. Tergum V as for tergum IV but with a pair of dark fuscous shining spots. In lateral view abdomen 'humped' though not as pronounced as in *Dacus solomonensis* Malloch. Terga III–V with yellow hairs. Ovipositor apex protruded in type and appears to be laterally compressed.

Attractant

No known record.

Distribution

Singapore.

Hosts

No known record.

Comments

Dacus (Callantra) murphyi is very similar to *D. (C.) icariiformis*. It differs in having the costal band extending only slightly below vein R₄₊₅ either side of r-m crossvein.

This species is named after Professor D. H. Murphy.

Dacus (Callantra) nanggalae Drew & Hancock, sp. nov.

(Fig. 21)

Material examined

Holotype. ♂, Palopo-Rantepao Rd, 16–23 km from Palopo, Sulawesi, Indonesia (250–500 m), 24.vii.1981, J. Turner, Nanggala III Forest, attracted to cue lure (BMNH).

Description

Male

Head. Height 2.3 mm. Frons: length 1.33× breadth; red-brown with fuscous around orbital bristles; anteromedial hump covered with small black hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous. Ocellar triangle black. Vertex fuscous. Face red-brown with a pair of large oval black spots; length of face 0.64 mm. Genae fulvous, pale fuscous subocular spot present; black seta present. Occiput red-brown, fulvous along eye margins; occipital row with a large number of black setae. Antennae with segments 1 and 2 fuscous, segment 3 red-brown with fuscous on apex and upper surface; a weak pale dorsal seta on segment 2; length of segments: 0.72 mm; 0.72 mm; 1.44 mm.

Thorax. Scutum black except dark red-brown between postpronotal lobes and notopleura and inside postpronotal lobes. Pleura black except red-brown below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; broad band along anterior margin of

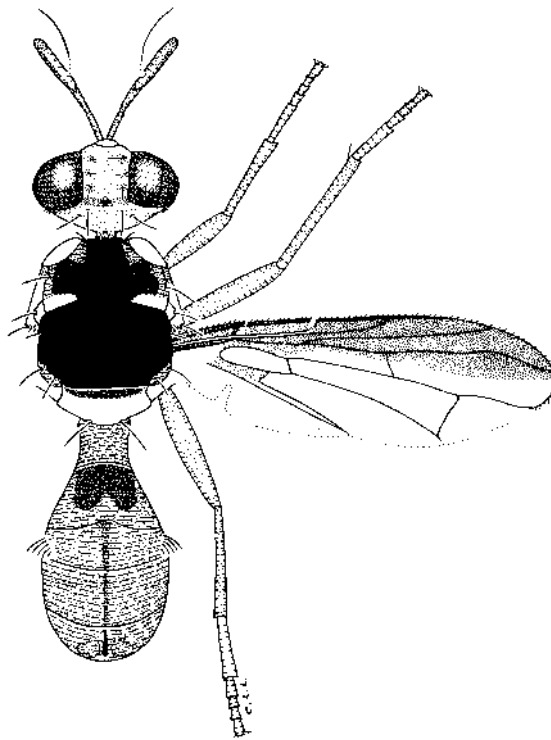


Fig. 21. *Dacus (Callantra) nanggalae* Drew & Hancock, sp. nov., male.

mesonotal suture; broad anepisternal stripe reaching anterior *npl.* bristle dorsally, continuing to katepisternum as a small transverse spot, anterior margin straight; anatergite (posterior apex black); anterior two-thirds katatergite (remainder black with ventral margin fuscous). Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for a broad black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora red-brown except for a dark fuscous spot posteroventrally on apical third of hind femora; all tibiae red-brown; tarsi fulvous; mid tibiae each with an apical black spur.

Wing. Length 6.3 mm; cells bc and c fuscous with dense microtrichia covering all of cell c and outer two-thirds of cell bc; remainder of wing colourless except fuscous to dark fuscous cell sc, broad fuscous to dark fuscous costal band overlapping R_{4+5} but not expanding apically, anal streak absent but with fuscous in basal area of cell cup; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate oval; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. All terga red-brown except for a diffuse dark fuscous area across anterior half of tergum II but not reaching lateral margins and a narrow medial longitudinal fuscous to black band over terga III–V. A pair of oval red-brown shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Indonesia (Sulawesi).

Hosts

No known record.

Comments

Dacus (Callantra) nanggalae is similar to *D. (C.) ambonensis* in having a costal band overlapping vein R₄₊₅, a narrow medial longitudinal dark vitta and no lateral longitudinal dark bands on abdominal terga III–V. It differs from *D. ambonensis* in having the anatergite and katatergite mostly yellow, costal band well coloured and distinct below vein R₄₊₅ for its entire length and anal streak absent (only colour in base of cell cup).

Dacus (Callantra) nummularius (Bezzi)

(Fig. 22)

Mellessis nummularia Bezzi, 1916: 115. – Bezzi, 1919: 441–442. Type locality: Mt Banahao, Luzon, Philippines. Lectotype ♂ in MSNM.

Mellessis apicalis Shiraki, 1933: 117, **syn. nov.** Type locality: Koshun, Taiwan. Syntypes (♂, ♀) possibly in NUT.

Callantra nummularia. – Hardy, 1974: 9–10; Hardy, 1977: 46.

Callantra apicalis. – Hardy, 1977: 45.

Dacus (Callantra) apicalis. – Kapoor, 1993: 83.

Material examined

Philippines: 1♀, Lipa, Batangas, Luzon, xii.[19]52, 868, C.B. Matabasco (BPBM). **Peninsular Malaysia:** 1♂, TN 3, 14.vii.1986, Yusoff Salleh, attracted to cue lure (QDPI); 1♂, TS 10, Bentong, 9.ii.1987, Bahari, attracted to cue lure (QDPI).

*Description**Male*

Head. Height 1.7–1.8 mm. Frons: length 1.3× breadth; red-brown dorsally, fulvous ventrally, fuscous around orbital bristles and on anteromedial hump; latter covered with a large number of short black hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous. Ocellar triangle black. Vertex fuscous. Face fulvous with two very large oval black spots filling most of antennal furrows; length 0.45 mm. Genae red-brown, small fuscous subocular spot present; black seta present. Occiput red-brown, yellow along eye margins; occipital row with 2–6 weak black setae. Antennae with segments 1 and 2 fuscous, segment 3 fuscous except red-brown on basal half of inner surface; no strong dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.48 mm; 0.6 mm; 1.04 mm.

Thorax. Scutum dull black centrally, on lateral margins between humeral and notopleural calli and along anterior margins of yellow stripes adjacent to mesonotal suture; red-brown to fuscous on posterior and red-brown on anterior areas of scutum. Pleura red-brown except broadly dark fuscous to black around margins of anepisternal stripe. Yellow markings as follows: postpronotal lobes; notopleura (ventral margins narrowly fuscous); broad anepisternal stripe, reaching anterior notopleural bristle dorsally, continuing to katepisternum as a transverse spot, anterior margin concave; broad triangular markings with bases at notopleura and running along anterior margins of mesonotal suture; a short medial longitudinal vitta rounded posteriorly and pointed anteriorly; anatergite (posterior apex fuscous to dark fuscous); anterior three-quarters of katatergite (remainder including ventral margin fuscous to dark fuscous). Lateral postsutural vittae absent. Mediotergite fuscous to dark fuscous (except red-brown each side of a fuscous to dark fuscous medial vertical line). Scutellum yellow except for a narrow dark fuscous basal band. Setae: *sc.* 2; *prsc.* absent in one specimen, 1 weak and 1 strong in the other specimen; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

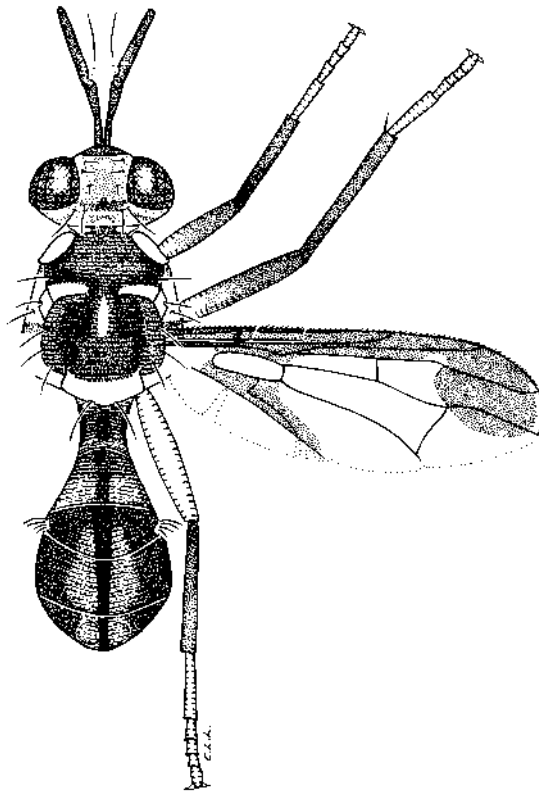


Fig. 22. *Dacus (Callantra) nummularius* (Bezzi), male.

Legs. Fore and mid femora fuscous to dark fuscous except for small fulvous areas basally, hind femora fulvous; all tibiae fuscous to dark fuscous; tarsi with basal segment fulvous, apical four segments fuscous; mid tibiae with an apical black spur.

Wing. Length 6.5–7.0 mm; cells bc and c fuscous; dense microtrichia covering all of cell c; remainder of wing colourless except for dark fuscous cell sc, broad dark fuscous costal band confluent with R_{4+5} and expanding into a large round spot in wing apex (a small colourless spot occurs in front of R_{4+5} where the expansion into the apical dark fuscous spot begins), narrow dark fuscous anal streak ending before wing margin; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III (consisting of only 4 or 5 bristles). Tergum I and sterna I and II longer than wide. Tergum I fuscous to dark fuscous except for small orange-brown spots anterolaterally and posterolaterally (a dark fuscous medial longitudinal vitta is present); tergum II orange-brown except for dark fuscous along anterior and lateral margins and a dark fuscous medial longitudinal vitta; terga III–V orange-brown except for dark fuscous along anterior margin of tergum III, a broad medial longitudinal dark fuscous band and two broad lateral longitudinal fuscous to dark fuscous bands over all three terga. A pair of oval orange-brown shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Taiwan; Philippines (Luzon); Peninsular Malaysia. Records from Myanmar (Burma) and north-east India (Hardy 1977) refer to *Bactrocera brachycera* (Bezzi) or a similar undescribed species.

Hosts

No known record.

Comments

Dacus (*Callantra*) *nummularius* is similar to *D. (C.) calirayae*, *D. (C.) discophorus*, *D. (C.) lagunae*, *D. (C.) leongi* and *D. (C.) subsessilis* in possessing a broad costal band confluent with vein R_{4+5} and expanding distinctly at apex. It differs from *D. lagunae*, *D. leongi* and *D. subsessilis* in having the ground colour of the scutum red-brown (not black) with a medial longitudinal postsutural yellow vitta. *D. nummularius* differs from *D. calirayae* in having a short narrow medial longitudinal postsutural vitta and from *D. discophorus* in possessing a broad anepisternal stripe reaching the anterior notopleural bristle. It is superficially similar to *Bactrocera* (*Sinodacus*) *infesta* (Enderlein) and *B. (S.) hochii* (Zia) but differs in the obvious generic and subgeneric characters.

Dacus (*Callantra*) *ooii* Drew & Hancock, sp. nov.

(Fig. 23)

Material examined

Holotype. ♂, Baha Pahat, Johore, Malaysia, July 1988, C.S. Ooi (BMNH).

Paratypes. **Malaysia**: 3♂, Ulu Langat, near Kuala Lumpur, 18.i.1989, Ooi Chee Seng, cue lure; 1♂, TS Gombak/Kuantan Road, 12.ii.1986, Mahadzir, cue lure; 2♂, RSI Pontian, 14.vii.1986, Salleh; 1♂, RSI, 8.ix.1986, cue lure; 1♂, Sungai Baging, 16.v.1986, R. Samat Wahid, cue lure; 1♂, R S Telong, 16.vi.1986, Fauzi, cue lure; 1♂, Kemaman, 8.ix.1986, Raja Azid; 1♂, TN 1, 23.ii.1987, Y. Salleh, cue lure; 2♂, Gombak/Kuantan Road, 9.iii.1987, Antony, cue lure; 1♂, Sungai Baging, 22.vi.1987, A. Samat Wahid, cue lure. (2♂, ANIC; 4♂, BMNH; 8♂, QDPI.)

Other material examined. **Indonesia**: 2♂, Santong, Lombok, (1200–1300 m), 2.vi.1981, J. Turner, cue lure; 1♂, Suranadi, Lombok (200 m), 31.v.1981, J. Turner, cue lure (all QDPI). **Thailand**: 1♂, Surat Thani, Chumporn Hor. Res. Centre, Sawi, Chumporn, 2.viii.1991, Pichate, cue lure (QDPI).

*Description**Male*

Head. Height 1.8 mm. Frons: length 1.4× breadth; red-brown with fuscous to dark fuscous around orbital bristles and on anteromedial hump; latter with a few small black hairs; bristles black: 1 orbital; 2 frontals; lunule red-brown. Ocellar triangle black. Vertex dark fuscous. Face fulvous with a pair of large irregularly oval black spots; length 0.44 mm. Genae fulvous, large dark fuscous subocular spot present; black seta present. Occiput fuscous (with dark fuscous around margins in some specimens), fulvous along eye margins; occipital row with a large number of pale to black setae. Antennae with segments 1 and 2 fuscous, segment 3 dark fuscous; no dorsal seta on segment 2; length of segments: 0.56 mm; 0.56 mm; 1.2 mm.

Thorax. Scutum and pleura black except red-brown below postpronotal lobes and on posterolateral corners of scutum, and dark fuscous inside postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; broad band along anterior margin of mesonotal suture; broad anepisternal stripe reaching to, or almost to, anterior *npl.* bristle, continuing to katapisternum as a small transverse spot, anterior margin straight; anatergite (posterior apex black); anterior two-thirds katatergite (remainder including ventral margin black). Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

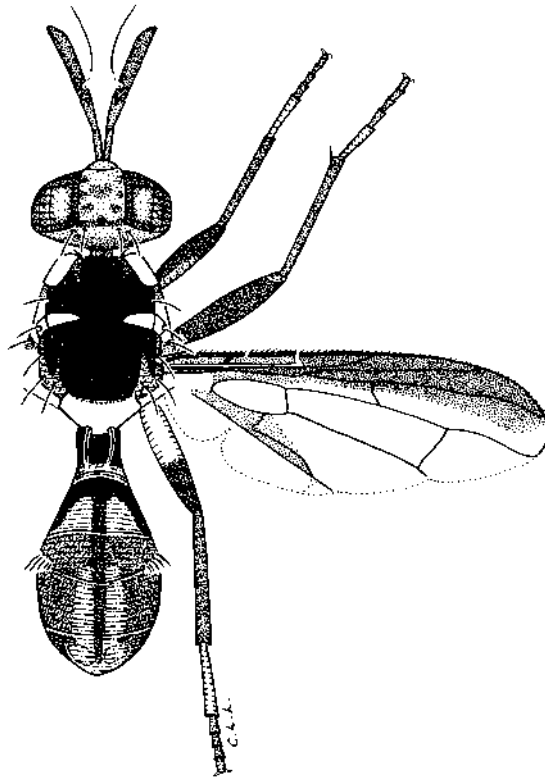


Fig. 23. *Dacus (Callantra) ooi* Drew & Hancock, sp. nov., male.

Legs. Fore femora with outer surfaces and apical half of inner surfaces variable fuscous to black, remainder of inner surfaces red-brown, mid femora pale fuscous to black (except small areas of red-brown around basal and apical points), hind femora with apical third to half dark fuscous to black (remainder fulvous); all tibiae dark fuscous; tarsi with basal segment fulvous, apical four segments darker; mid tibiae each with an apical black spur.

Wing. Length 7.0 mm; cells bc and c fuscous; dense microtrichia covering all of cell c and outer half of cell bc; remainder of wing colourless except dark fuscous cell sc, broad dark fuscous costal band overlapping R_{4+5} from base of cell br and gradually widening to apex of wing (in a few specimens it reaches but does not overlap M: when reaching M it is usually pale fuscous in that area), a narrow fuscous anal streak ending well before wing margin; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sternum I and II longer than wide. Terga I and II black except orange-brown along intersegmental line between both terga and two large fulvous to orange-brown spots posterocentrally on tergum II either side of a medial longitudinal black vitta; terga III–V orange-brown except for a broad dark fuscous to black medial longitudinal vitta and two broad variable fuscous to dark fuscous lateral longitudinal vittae over all three terga and joining over all or most of tergum III. A pair of oval orange-brown shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Peninsular Malaysia; southern Thailand; Indonesia (Lombok).

Hosts

No known record.

Comments

Dacus (Callantra) ooi is similar to *D. (C.) pictus* in possessing a costal band overlapping R_{4+5} and of approximately uniform width (usually not touching or overlapping vein M except at base), abdominal terga II–V with a broad medial longitudinal dark band and terga III–V with broad lateral longitudinal dark bands. It differs from *D. pictus* in having a black scutum, costal band widening slightly at apex and a distinct anal streak in the wing.

This species is named after Mr Ooi Chee Seng, University of Malaya, Kuala Lumpur, in recognition of his contributions to fruit fly research in Malaysia.

Dacus (Callantra) pedunculatus (Bezzi)

(Fig. 24)

Mellessis pedunculata Bezzi, 1916: 115. – Bezzi, 1919: 439–440. Type locality: Mt Makiling, Luzon, Philippines. Lectotype ♂ in MSNM.

Callantra pedunculata. – Hardy, 1970: 72; Hardy, 1974: 10–11; Hardy, 1977: 46.

Material examined

Philippines: 1 ♂, Mayoyao, Ifugao, Mt. Prov., Luzon, 1200–1500 m, 14.ix.1966, H.M. Torrevillas (BPBM); 1 ♀, Tawi Tawi, Tarawakan, north of Batu batu, 23.x.1961, Noona Dan Exp. 61–62 (BPBM).

*Description**Male*

Head. Height 1.56 mm. Frons: length 1.4× breadth; fulvous, with yellow antero-lateral areas and red-brown on anteromedial hump; bristles black: 1 orbital; 2–3 frontals; lunule red-brown and deep, 0.26 mm high. Ocellar triangle black. Vertex fuscous. Face with a deep black line across oral margin that expands vertically into a spot in each antennal furrow; a fuscous spot below antenna bases; face 0.35 mm high. Parafacial with a fuscous spot between each eye and the ptilinal suture, close to bases of antennae. Genae fulvous with an ill-defined fuscous subocular spot; black seta present. Occiput red-brown with yellow along eye margins; numerous weak dark setae in occipital row. Antennae with segments 1 and 2 red-brown, segment 3 fuscous; no distinct seta on segment 2; arista dark, pale basally; length of segments: 0.5 mm; 0.5 mm; 0.9 mm.

Thorax. Scutum red-brown with streaks of black in lateral areas and along dorsocentral lines. Pleura black except pale below postpronotal lobe and on posterior part of katapisternum. Yellow markings as follows: postpronotal lobes; notopleura; triangular marking along anterior side of mesonotal suture; narrow anepisternal stripe, only a little broader dorsally than yellow on notopleuron and continuing onto katapisternum as a transverse spot; anatergite and katatergite mostly yellow. Lateral and medial postsutural vittae absent. Subscutellum and lateral areas of mediotergite black, central areas dark red-brown. Scutellum yellow except for narrow fuscous basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4–6.

Legs. Femora predominantly red-brown except hind femora fulvous on basal quarter; mid femora damaged but appears pale basally. Tibiae fulvous, tending to fuscous on hind tibiae; tarsi fulvous (mid tarsi missing); mid tibiae each with a black apical spur; hind tibiae with a preapical microtrichose bulge.

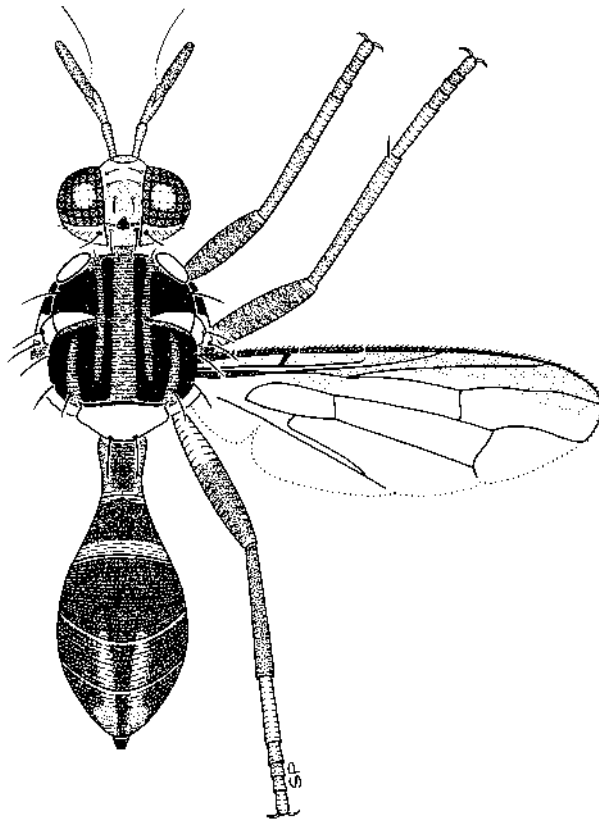


Fig. 24. *Dacus (Callantra) pedunculatus* (Bezzi), female.

Wing. Length 6.0 mm; cell c with a pale fuscous tint, cell bc pale fulvous; cell c with dense microtrichia throughout; cell bc with microtrichia in outer apical area; remainder of wing hyaline except for pale fuscous in narrow part of cell br, fuscous cell sc and fuscous costal band that almost reaches R_{4+5} , only crossing vein R_{4+5} as a shallow expansion beyond the end of vein R_{2+3} . No anal streak. Dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I about 1.6× as long as wide in narrowest point. Tergum I red-brown, fuscous medially, with fulvous band across intersegmental line between terga I and II; tergum II fuscous with orange-brown across posterior quarter; tergum III fuscous, with a trace of pale spots either side of centre on hind margin; tergum IV fuscous laterally and on midline, with narrow strips of fulvous either side of midline; tergum V fulvous, including shining spots, fuscous antero-laterally and on midline. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Female

As for male except hind femora fulvous on basal half, mid femora entirely red-brown, no pecten on abdominal tergum III; no microtrichia around A_1+CuA_2 or on hind tibiae. Wing length 5.6 mm. Oviscape round in cross-section; short, not visible in dorsal view.

Attractant

No known record.

Distribution

Philippines (Luzon, Mindanao, Tawi Tawi).

Hosts

No known record.

Comments

Dacus (Callantra) pedunculatus is similar to *D. (C.) indecorus* in characters given under the comments for *D. indecorus*. It differs in having a broad dark band across the oral margin, a dark marking each side between the antennal base and eye margin, cell bc not entirely covered with microtrichia and the anal streak absent.

Dacus (Callantra) pictus (Hardy)

(Fig. 25)

Callantra picta Hardy, 1970: 72–74. Type locality: Uring Uring, Palawan, Philippines. Holotype ♂ in ZMUC.

Material examined

Philippines: holotype ♂, Uring Uring, Palawan, 26.ix.1961, in Malaise trap.

*Description**Male*

Head. Height 1.8 mm. Frons: length 1.45× breadth; fulvous, except pale fuscous on anteromedial hump and around orbital bristles; anteromedial hump with a few short black hairs; bristles black: 1 orbital; 2 frontals; lunule pale fuscous. Ocellar triangle black. Vertex black. Face yellow with large black spots that extend as traces of reddish colour to meet beneath antenna bases. Large black spot dorsolateral of each antenna base, but confined to area within ptilinal suture. Genae pale, with large ill-defined fuscous subocular spot; dark seta present. Occiput fulvous with yellow-white along eye margins; occipital row with 4 dark setae. Antennae with segment I fulvous, segments 2 and 3 red-brown; arista dark, pale basally; length of segments: 0.64 mm; 0.60 mm; 1.20 mm.

Thorax. Scutum mostly red-brown; bright orange-brown in centre of prescutum; dark fuscous triangle laterally on prescutum and dark fuscous stripe dorsocentrally behind mesonotal suture. Pleural areas generally fuscous to black, but fulvous below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; anepisternal stripe reaching anterior notopleural seta dorsally, extending to katapisternum ventrally as a broad spot; anatergite and katatergite almost entirely yellow; some trace of possible medial vitta (obscured anteriorly by pin). No lateral vittae. Subscutellum black; mediotergite black laterally, red-brown centrally. Scutellum yellow except for narrow dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora red-brown (tending darker along ventral margins) except basal two-thirds of hind femora fulvous; tibiae red-brown to fuscous; tarsi pale fulvous; mid tibiae each with a black apical spur; hind tibiae with pre-apical microtrichose hump.

Wings. Length 7.7 mm. Cell bc pale fuscous; cell c fuscous; microtrichia in apical half of cell bc and throughout cell c; remainder of wing hyaline except for fuscous cell sc, narrow basal part of cell br, broad fuscous costal band overlapping R₄₊₅ and expanding mid way to M apically; with an ill-defined narrow anal streak ending before wing margin. Dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

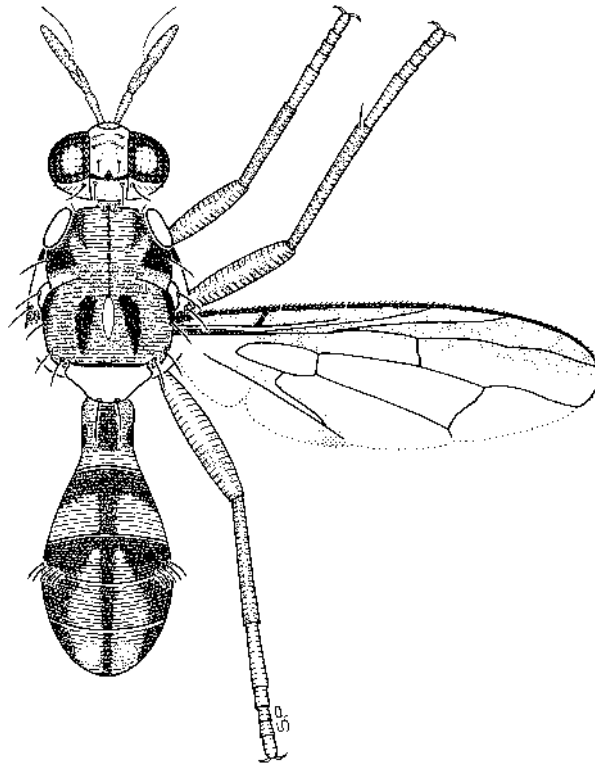


Fig. 25. *Dacus (Callantra) pictus* (Hardy), male.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I about as long as wide. Tergum I red-brown, fuscous centrally and fulvous posteriorly; tergum II fulvous, with a broad fuscous band across anterior margin and a fuscous medial longitudinal band; tergum III fuscous with a trace of fulvous posteriorly each side of midline; tergum IV fulvous, broad fuscous marks laterally and fuscous midline; terga V fulvous, sub-rectangular fuscous marks anterolaterally and fuscous midline. A pair of fulvous shining spots on tergum V. Posterior lobes of surstyli of medium development, sternum V with a shallow concavity on posterior margin.

Attractant

No known record.

Distribution

Palawan.

Hosts

No known record.

Comments

Dacus (Callantra) pictus is similar to *D. (C.) ooi* in possessing a costal band that overlaps vein R_{4+5} and of approximately uniform width (not touching or overlapping vein M except at base), abdominal terga II–V with a broad medial longitudinal dark band and terga III–V with broad lateral longitudinal dark bands. It differs from *D. ooi* in having the ground colour of the scutum red-brown, the costal band not widening at apex and the anal streak in the wing pale and indistinct.

Dacus (Callantra) polistiformis (Senior-White)

(Fig. 26)

Mellesis polistiformis Senior-White, 1922: 156–158. Type locality: Sukna, E Himalayas, India. Holotype ♂ in BMNH.

Callantra munroi Zaka-ur-Rab, 1961: 538–541, **syn. nov.** Type locality: Aligarh, India. Holotype ♀ in MUA.

Callantra nepalensis Hardy, 1964: 149–151. – Hardy, 1977: 46; **syn. nov.** Type locality: River Arun, E Nepal. Holotype ♀ in BMNH.

Callantra polistiformis. – Hardy, 1977: 46.

Callantra quadristriata Munro, 1984: 155, **syn. nov.** Type locality: Pusa, Bihar, India. Holotype ♂ in NCIP.

Dacus (Callantra) nepalensis. – Liang *et al.*, 1993: 139.

Dacus (Callantra) munroi. – Kapoor, 1993: 83.

Dacus (Callantra) quadristriata. – Kapoor, 1993: 83.

Material examined

India: Holotype ♂ of *D. polistiformis*, Sukna, 500 ft (26°47'N, 88°22'E), West Bengal, near Darjeeling, 4.xii.1919; 1 ♀, NE India, T. Jermyn, BM 1949-53 (BMNH). **Nepal:** holotype ♀ of *D. nepalensis*, evergreen shrubs in rocky ravine above E shore of River Arun, c. 2000 ft, 25.xii.1961, Brit Mus East Nepal Expedition, 1961–62, R.L. Coe Coll., BM 1962-177. **China:** 1 ♀, Xishuangbanna, Yunnan Province (ASB).

*Description**Male*

Head. Frons fulvous with a trace of a transverse fuscous line across middle. Bristles: 0–1 orbitals; 1–2 frontals; lunule fulvous and shallow (not enlarged as in many species of *Callantra*); upper end of parafacial with a fuscous line connecting eye and ptilinal fissure, close to antenna base. Ocellar triangle black. Vertex fuscous. Face fulvous with a narrow black line across mouth and joining traces of a narrow fuscous line up each antennal furrow. Genae fulvous with a fuscous subocular spot; setae pale. Occiput fulvous with numerous fine pale hairs in occipital row. Antennae fulvous; segment 2 with a small pale dorsal seta, arista black except pale basally.

Thorax. Scutum red-brown. Pleural areas red-brown. Yellow markings as follows: postpronotal lobe; sometimes (not type) with a yellow spot adjacent to postpronotal lobe; notopleura; a narrow wedge-shaped band along anterior margin of mesonotal suture; narrow anepisternal stripe, only as wide as notopleuron and continued a short way onto katapisternum; katatergite (except posterior margin); a small anterior wedge of yellow on anatergite. Lateral and medial postsutural vittae absent. Subscutellum and mediotergite red-brown. Scutellum yellow except for narrow red-brown basal band. Setae pale: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* absent; *anepst.* 1; *npl.* 2; *scp.* not differentiated from general vestiture.

Legs. Femora red-brown except basal fifth of mid and hind femora indistinctly fulvous; fore femora with 2 or 3 prominent ventral spines (2 in holotype). Tibiae fulvous to red-brown, mid tibiae each with a black apical spur, hind tibiae with preapical microtrichose bulge.

Wing. Length 8.2 mm (range observed 6.9–8.6 mm); cells bc and c pale fuscous; dense microtrichia in cell c and apical half of cell bc; remainder of wing hyaline except for pale fuscous costal band that fills most of cell br and overlapping R₄₊₅ to fill, at least, the upper half of cell r₄₊₅; costal band usually (including holotype) abruptly darkened to fuscous beyond end of vein R₂₊₃. No anal streak. Dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused, pecten present on tergum III. Tergum I about twice as long as width at narrowest point. All terga red-brown except for fuscous transverse markings across bases of terga II, IV and V. A pair of red-brown shining spots on tergum V that have an ill-defined fuscous midline between them. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

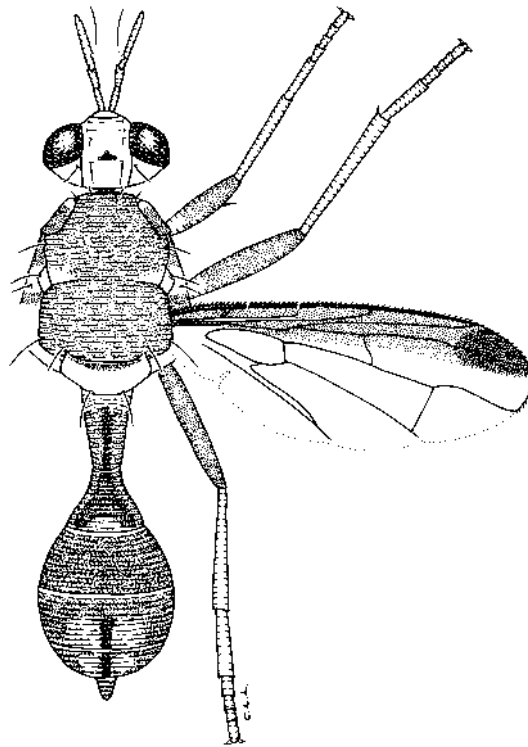


Fig. 26. *Dacus (Callantra) polistiformis* (Senior-White), female.

Attractant

No known record.

Distribution

Northern India; East Nepal; China (Yunnan Province).

Host

Oxystelma esculentum (Asclepiadaceae). Munro (1984) noted that the holotype of *C. quadristriata* was bred from a pod of a wild plant (possibly an asclepiad) on *Tamarix*.

Comments

Dacus (Callantra) polistiformis is similar to *D. (C.) bispinosus* and *D. (C.) esakii* in having a broad costal band not distinctly expanded at the apex and strong subapical spines on the fore femora. It differs from these species in having a costal band overlapping vein R_{4+5} and of uniform width throughout its length.

***Dacus (Callantra) pullus* (Hardy)**

(Fig. 27)

Callantra pullus Hardy, 1982: 181–183. Type locality: Sadaunta, nr Palu, Sulawesi. Holotype ♂ in MBB.

Material examined

Indonesia: holotype ♂, Sadaunta, 65 km SE of Palu, Sulawesi, 650 m, viii.1975, D.E. & A.T. Hardy.

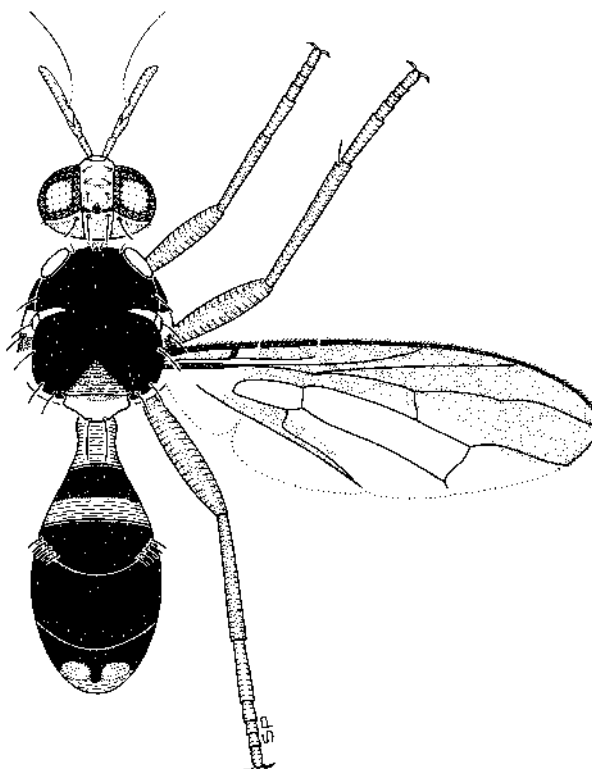


Fig. 27. *Dacus (Callantra) pullus* (Hardy), male.

Diagnosis

Large species, wing length 8.4 mm; face with two large round, slightly elongate black spots; postpronotal lobes yellow; notopleura yellow; scutum black with red-brown posteriorly; lateral and medial postsutural vittae absent; broad triangular markings along anterior margins of mesonotal suture; scutellum yellow; anepisternal stripe narrow; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* 1, *anepst.* 1, *npl.* 2; wing with cells *bc* and *c* fuscous, broad fuscous costal band almost confluent with *M* and overlapping this vein at apex, anal streak present; femora red-brown with a dark fuscous to black streak on basal half of posteroventral surfaces, all tibiae red-brown with hind tibiae darker; no spines on fore femora; abdomen with terga III–V fuscous except fulvous along posterior margin of tergum V and on the oval shining spots on this tergum.

Attractant

No known record.

Distribution

Indonesia (Sulawesi).

Hosts

No known record.

Comments

Dacus (Callantra) pullus is similar to *D. (C.) insulosus* and *D. (C.) longicornis* in having the costal band overlapping vein R_{4+5} throughout and yellow postpronotal lobes. It differs from both species in having a black scutum, abdominal terga III–V mostly black and the costal band almost reaching vein *M* in centre of wing and overlapping this vein at its apex.

Dacus (Callantra) ramanii Drew & Hancock, sp. nov.

(Fig. 28)

Material examined

Holotype. ♂, 37 km E of Kodaikanal (850 m), India, 2.vi.1992, D.L. Hancock, attracted to cue lure (BMNH).

Paratypes. **India:** 1♂, Bangalore (916 m), Kanataka, 24.ii.1988, G. Bhat, cue lure (QDPI). **Sri Lanka:** 1♂, Ham[bantota] District, Palatupana Tank (10–20 m), 27–29.ix.1977, K.V. Krombein, P.B. Karunaratne, T. Wijesinhe, M. Jayaweera (NMNH); 1♂, Tabbowa, 24.ix.1994, C[ue lure] trap; 1♂, Tabbowa, 22.x.1994, C14; 1♂, Tabbowa, 7.x.1994, C16; 2♂, Tabbowa, 28.ii.1995, C16 (all Tabbowa specimens additionally labelled Sri Lanka NPQS Project Sp. R. No. 33) (all BMNH).

*Description**Male*

Head. Height 0.96 mm. Frons: length 1.45× breadth; dark fuscous except with fulvous spots along eye margins between bristles; anteromedial hump covered with a larger number of small pale hairs; bristles black: 1 orbital; 2 frontals; lunule black. Ocellar triangle black. Vertex black. Face glossy black; length 0.32 mm. Genae red-brown, dark fuscous subocular spot present; black seta present. Occiput black, fulvous along eye margins; occipital row with a large number of black setae. Antennae with segments 1 and 2 fuscous, segment 3 dark fuscous except red-brown along lower margin of inner surfaces; a red-brown dorsal bristle on segment 2; arista black (red-brown basally); length of segments: 0.28 mm; 0.28 mm; 0.64 mm.

Thorax. Scutum and pleura shining black without pale markings. Yellow markings as follows: postpronotal lobes (except anterior and ventral margins black); notopleura; broad anepisternal stripe reaching postpronotal lobe dorsally, continuing to katepisternum below as a transverse spot, anterior margin straight; narrow triangle along anterior margin of mesonotal suture; anatergite (posterior apex black); anterior two-thirds katatergite (remainder black). Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 2.

Legs. Fore and mid femora glossy black, hind femora fulvous except apical third glossy black; fore tibiae fuscous, mid tibiae fulvous tending fuscous basally, hind tibiae dark fuscous; tarsi entirely fulvous; mid tibiae each with an apical black spur.

Wing. Length 3.6 mm; cells bc and c colourless or with a very pale tint; microtrichia over most of cell c only; remainder of wing colourless except dark fuscous cell sc, broad dark fuscous costal band expanding along r-m cross vein and then widening apically to overlap R₄₊₅ in an irregular pattern; anal streak absent; dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate oval; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. All terga shining black without pale markings. A pair of oval black shining spots on tergum V. Posterior lobe of surstylus slightly elongated, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Southern India and Sri Lanka.

Hosts

No known record.

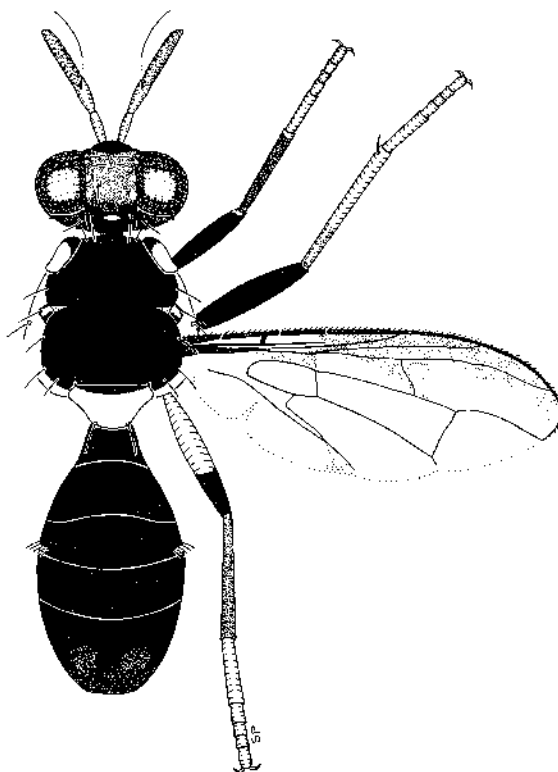


Fig. 28. *Dacus (Callantra) ramanii* Drew & Hancock, sp. nov., male.

Comments

Dacus (Callantra) ramanii is similar to *D. (C.) crabroniformis*, *D. (C.) satanas* and *D. (C.) sinensis* in having the costal band confluent with or overlapping vein R_{4+5} , cells bc and c colourless, lateral and medial postsutural vittae absent and abdominal terga mostly black. It differs from these species in having a different costal band shape, which is expanded medially over r-m crossvein.

This species is named after Dr S. Ramani in recognition of his contributions to the study of Indian fruit flies.

Dacus (Callantra) satanas (Hering)

(Fig. 29)

Callantra satanas Hering, 1939: 166–167. – Hardy, 1977: 46. Type locality: Hoa Binh, Vietnam.
Holotype ♂ in MNHN.

Callantra ziae Wang, 1990: 71, 75–76, **syn. nov.** Type locality: Xiaomengyang, Yunnan, China.
Holotype ♂ in ASB.

Dacus (Callantra) ziae. – Liang *et al.*, 1993: 139.

Material examined

Vietnam: holotype ♂ of *D. satanas*, Tonkin, Hoa Binh, A. de Cooman, 1927 (MNHN). **China:** holotype ♂ and 1♀, 1♂ paratypes of *D. ziae*; Xiaomengyang, 850 m, 2.iv.1957; Menghua, 1200 m, 28.vi.1958; Daimenglong, 7.iv.1958; all Yunnan Province (ASB).

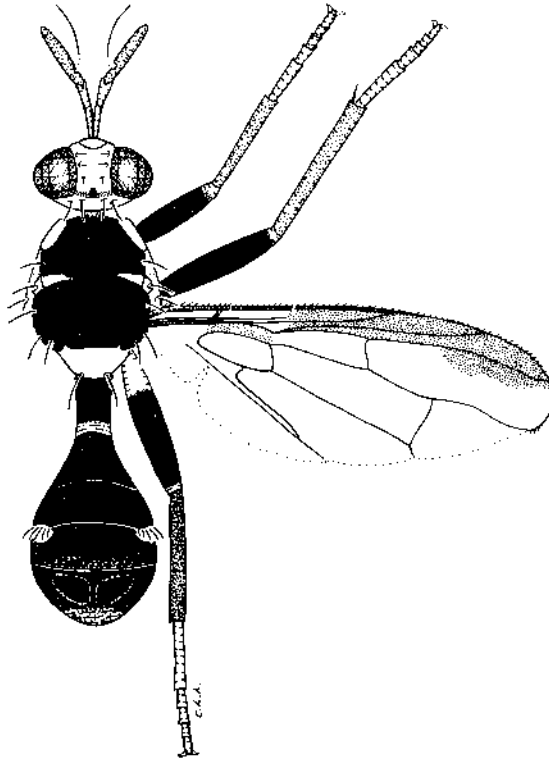


Fig. 29. *Dacus (Callantra) satanas* (Hering), male.

Diagnosis

Small species; face black; postpronotal lobes yellow; notopleura yellow; lateral and medial postsutural vittae absent; triangular markings along anterior margins of mesonotal suture; scutellum yellow; anepisternal stripe of medium width; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* 1 (weak), *anepst.* 1, *npl.* 2; wing with cells *bc* and *c* colourless, broad fuscous costal band confluent with R_{4+5} and overlapping this vein at apex, anal streak absent, cell cup with apical lobe elongate, microtrichia present but indistinct around A_1+CuA_2 ; legs with femora black except fulvous at apices and on approximately basal quarter of hind femora, fore and hind tibiae dark fuscous and mid tibiae fuscous; abdomen with pecten present on tergum III in holotype ♂ of *D. ziae* but apparently absent in the male paratype; terga predominantly black except with dark red-brown along hind margins of terga IV and V.

Attractant

No known record.

Distribution

Northern Vietnam; China (Yunnan Province).

Hosts

No known record.

Comments

Dacus (Callantra) satanas is similar to *D. (C.) crabroniformis* in having a black face, wing with the costal band confluent with vein R_{4+5} except at apex, cells *bc* and *c* colourless, scutum

and abdominal terga mostly black. It differs from *D. crabroniformis* in having all femora black except the basal quarter of hind femora fulvous (in *D. crabroniformis* the femora are mostly red-brown) and the postpronotal lobes entirely yellow.

Dacus (Callantra) siamensis Drew & Hancock, sp. nov.

(Fig. 30)

Material examined

Holotype. ♂, Doi Luang Natl Pk, 50 km S of Chiang Rai, Thailand, 18.i.1994, D.L. Hancock and Charuwan Kong Krong (BMNH).

Paratypes. **Thailand:** Central Region: 9♂, Khao Kheaw, Pakphli, Nakhonnayok, 18.x.1991, 8.vii.1991, 26.xi.1991, Montree, cue lure; 27♂, Wang Jum Pee, Pakchong, Nakhonratsima, 18.x.1991, 25.x.1991, 1.xi.1991, 15.xi.1991, 29.xi.1991, 6.xii.1991, 13.xii.1991, 20.xii.1991, 27.xii.1991, 3.i.1992, 24.i.1992, 31.i.1992, 10.iv.1992, 10.vii.1992, Montree, cue lure; Chiang Mai: 10♂, Mae Hae, 10.i.1992, 30.i.1992, 18.ii.1992, Chantanee, cue lure; 1♂, NRDC, 27.ix.1991, Chantanee, cue lure; Chiang Rai: 1♂, Chiang Sang, 10.vi.1991, Charuwan, cue lure; 65♂, Khun Khon, 9.i.1992, 15.i.1992, 23.i.1992, 30.i.1992, 4.ii.1992, 6.ii.1992, 13.ii.1992, 27.ii.1992, Charuwan, cue lure; 4♂, Phan, 8.i.1992, 15.i.1992, Charuwan, cue lure; 5♂, Pha Yao, 22.i.1992, Charuwan. (20♂, ANIC; 40♂, BMNH; 62♂, QDPL.)

Description

Male

Head. Height 1.4–2.0 mm. Frons: length 1.1× breadth; red-brown with or without fuscous around orbital bristles; anteromedial hump covered with small black hairs; bristles black: 1 orbital; 2 frontals; lunule red-brown, tending black dorsally in some specimens. Ocellar triangle black. Vertex black. Face fulvous to red-brown with an inverted-U-shaped black pattern (formed by a broad black band across dorsal margin just below antennal bases joining the large oval black spots in the antennal furrows) and in some specimens a fuscous line across oral margin; length 0.4–0.44 mm. Genae fulvous, black subocular spot present; black seta present. Occiput black, fulvous along eye margins; occipital row with a large number of weak black setae. Antennae with segment 1 dark fuscous, segments 2 and 3 black; no dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.6 mm, 0.6 mm; 1.04 mm.

Thorax. Scutum black with a dark red-brown area along posterior margin and laterally below *sa*. bristles. Pleura black without red-brown markings. Yellow markings as follows: notopleura (black posteriorly in some specimens); anepisternal stripe varying from a very short and narrow wedge just below notopleura to a complete band equal in width to or just wider than notopleura dorsally, continuing to katapisternum as a transverse spot, anterior margin straight; a yellow triangle along anterior margin of mesonotal suture; anterior two-thirds of katatergite (remainder, including ventral margin and in some specimens dorsal margin, black). Postpronotal lobe dark fuscous to black. Anatergite black. Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for a very narrow dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1 (sometimes weak); *anepst.* 1; *npl.* 2; *scp.* 2–4.

Legs. Femora black except dark red-brown apically on mid femora; tibiae dark fuscous to black; fore tarsi fuscous on basal segment and dark fuscous on apical 4 segments, mid and hind tarsi fulvous on basal segment and fuscous on apical 4 segments; mid tibiae each with an apical black spur.

Wing. Length 5.7–8.3 mm; cells bc and c dark fuscous; dense microtrichia covering all of both cells; remainder of wing colourless except for dark fuscous cell sc, broad dark fuscous costal band overlapping R₄₊₅ and of uniform width; anal streak absent; dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

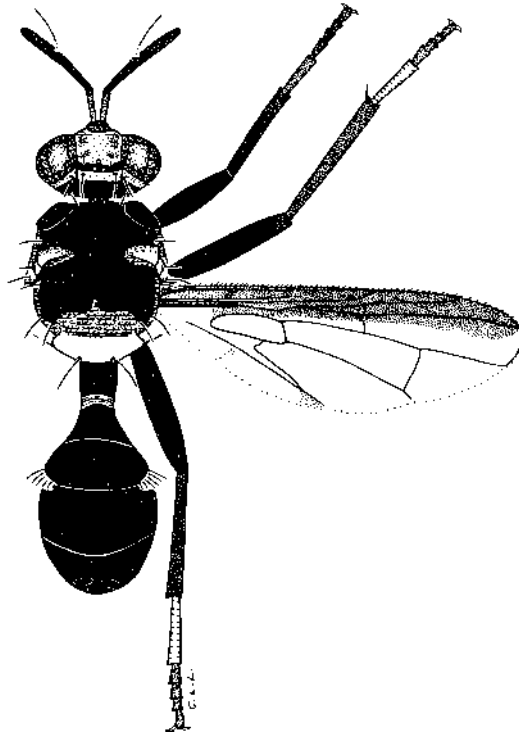


Fig. 30. *Dacus (Callantra) siamensis* Drew & Hancock, sp. nov., male.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sternum I and II longer than wide. All terga black except fulvous along intersegmental line between terga I and II and in some specimens orange-brown posterocentrally on terga IV and V. A pair of black oval shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Central and northern Thailand.

Hosts

No known record.

Comments

Dacus (Callantra) siamensis is similar to *D. (C.) tenebrosus* and *D. (C.) vijaysegarani* in possessing a broad costal band overlapping vein R_{4+5} , scutum, legs and abdominal terga mostly black, postpronotal lobes dark fuscous to black and face with an inverted-U-shaped dark pattern joined to a black band across oral margin. *D. siamensis* differs from *D. tenebrosus* in having the anatergite black and from *D. vijaysegarani* in having yellow notopleura (not black).

Dacus (Callantra) sinensis (Wang)

(Fig. 31)

Callantra sinensis Wang, 1990: 70, 75. Type locality: Daimenglong, Yunnan, China. Holotype ♂ in ASB.

Dacus (Callantra) sinensis. – Liang *et al.*, 1993: 139.

Material examined

China: holotype ♂, allotype ♀, Daimenglong, Yunnan, 650 m, 9.iv.1958, Zhang Yiran; 1 ♂, 1 ♀ paratypes, Jinping, Yunnan, 370–420 m, 17–21.iv.1956, Huang Keren; 1 ♀ paratype, Cheli, Yunnan, 580 m, 12.iii.1957, Pu Fuji; 1 ♂, 1 ♀ paratypes, Xishuangbanna, Yunnan, 540 m and 1050–1080 m, 15.iii.1957 and 29.v.1958, Liu Daihua or Wang Shuyang (all ASB).

Diagnosis

Small species; face fulvous with two large black spots; postpronotal lobes yellow; notopleura yellow; lateral and medial postsutural vittae absent; triangular markings along anterior margins of mesonotal suture; scutellum yellow; anepisternal stripe of medium width; setae: *sc.* 2, *prsc.* absent, *ta.* 1, *p.sa.* 1, *sa.* 1, *anepst.* 1, *npl.* 2; wing with cells *bc* and *c* colourless, broad fuscous costal band confluent with R_{4+5} and overlapping this vein at apex, anal streak absent, microtrichia absent around A_1+CuA_2 ; cell cup with apical lobe short; legs with femora and tibiae black except fulvous around basal three-fifths of hind femora; abdomen with pecten absent on tergum III, abdominal terga mostly black with red-brown along posterior margins of terga IV and V either side of a medial black vitta.

Attractant

No known record.

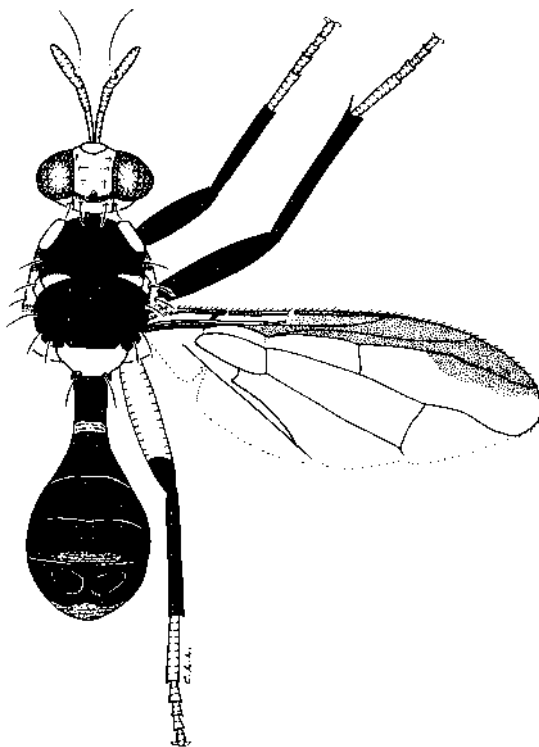


Fig. 31. *Dacus (Callantra) sinensis* (Wang), male.

Distribution

China (Yunnan Province).

Hosts

No known record.

Comments

Dacus (Callantra) sinensis is similar to *D. (C.) satanas* and *D. (C.) crabroniformis* in having the costal band confluent with vein R_{4+5} except at wing apex, cells bc and c colourless, scutum and abdominal terga mostly black. It differs from these species in possessing two black spots on the face and black only on apical third of hind femora.

In the Dacinae, species that have the pecten absent on the male abdominal tergum III also have the dense microtrichia absent in the wing around vein A_1+CuA_2 . Within the genus *Dacus* this is an uncommon set of characters. The fact that this state occurs in *D. crabroniformis*, *D. satanas* and *D. sinensis*, together with major similarities in leg, wing and body colour patterns, suggests that these are conspecific. However, they are being treated as separate species until more material can be obtained for study.

Dacus (Callantra) sphaeroidalis (Bezzi)

(Fig. 32)

Mellessis sphaeroidalis Bezzi, 1916: 115–116. Type locality: Dehra Dun, India. Holotype ♂ in BMNH.

Callantra sphaeroidalis. – Hardy, 1973: 11; Hardy, 1977: 46.

Dacus (Callantra) sphaeroidalis. – Liang *et al.*, 1993: 139.

Material examined

India: holotype ♂, Dehra Dun 16.vii.1912, on grass. **Pakistan:** 3♂, 3♀, Rawalpindi, 28.iii.1962, 1,3,12.iii.1962, bred from *Telosma cordata* (QDPI). **Thailand:** 1♂, Phan, Chiang Rai, 18.ix.1991, Charuwan, attracted to cue lure (QDPI); 1♂, Lam Poon, Chiang Mai, 22.viii.1991, Chantanee, cue lure (QDPI). **China:** 1♂, Chongan, Fujian Province (ASB).

*Description**Male*

Head. Height 1.88 mm. Frons: length 1.36× breadth; red-brown with dark fuscous around orbital bristles; latter covered by a few short pale hairs; bristles black: 1 orbital; 2 frontals; lunule red-brown. Ocellar triangle fuscous. Vertex red-brown. Face red-brown with two large elongate black spots filling almost the entire antennal furrows; length 0.72 mm. Genae red-brown, indistinct fuscous subocular spot present; black seta present. Occiput red-brown with fulvous along eye margins; occipital row with 3 or 4 small dark setae. Antennae with segments 1 and 2 red-brown, segment 3 pale fuscous; arista black (red-brown basally); length of segments: 0.32 mm; 0.64 mm; 1.12 mm.

Thorax. Scutum red-brown, without dark markings other than a mottled appearance due to sites of attachment of dorso-ventral flight muscles. Pleura red-brown except black along anterior margin of anepisternal stripe and between posterior margin of this stripe and the katatergite. Yellow markings as follows: postpronotal lobes; notopleura; broad anepisternal stripe, reaching midway between notopleuron and postpronotal lobe, narrower at top and continuing to katapisternum as a transverse spot, anterior margin convex; broad triangular markings with bases on notopleura and running along anterior margins of mesonotal suture; anatergite (posterior apex dull black); anterior three-quarters of katatergite (remainder dull black). Lateral and medial postsutural vittae absent. Mediotergite red-brown. Scutellum yellow except for a narrow black basal band. Setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* absent, *anepst.* 1, posterior *npl.* 1, anterior *npl.* absent (or very weak), *scp.* 2–3.

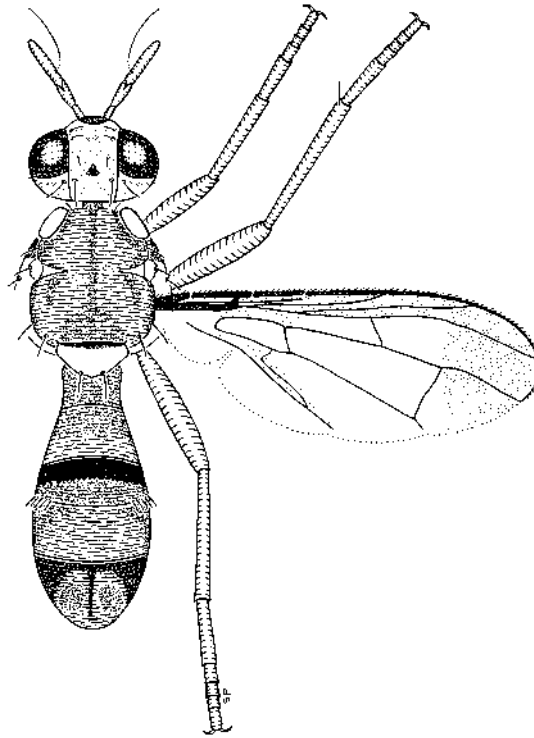


Fig. 32. *Dacus (Callantra) sphaeroidalis* (Bezzi), male.

Legs. Fore and mid femora red-brown, hind femora fulvous except red-brown around apical third, elongate black markings on apical ventral surfaces of all femora, fore and mid tibiae red-brown, hind tibiae red-brown basally and pale fuscous apically, tarsi fulvous tending red-brown on apical segments.

Wing. Length 7.1 mm; cells bc and c fuscous; dense microtrichia covering both cells bc and c; remainder of wings with a pale fuscous tint across membrane except for fuscous cell sc, broad fuscous costal band confluent with R_{4+5} and expanding apically into a large round dark fuscous spot which overlaps M; pale fuscous anal streak present; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate-oval, petiolate but not as strongly as species such as *D. longicornis*, terga fused; pecten present on tergum III. Terga I and II red-brown except for two large fulvous spots posterolaterally on tergum II; terga III–V red-brown except for a narrow transverse black band across anterior margin of tergum III but not reaching lateral margins, a small diffuse dull black spot anterocentrally on tergum IV, a transverse black band across anterior margin of tergum V which widens around lateral margins and with a narrow medial longitudinal black band that does not reach posterior margin, two paler posterolateral spots on tergum IV that are tending towards fulvous. A pair of oval fuscous to dark fuscous shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Northern India; Pakistan; northern Thailand; China (Fujian Province); Vietnam.

Host

Telosma cordata (Chinese violet) (Asclepiadaceae).

Comments

Dacus (*Callantra*) *sphaeroidalis* and *D. (Dacus) ortholomatus* are similar in having a broad costal band that expands apically to meet or overlap vein M and lacking spines on the fore femora. They differ in the absence of both a postsutural medial yellow vitta on the scutum and a medial longitudinal black vitta on abdominal terga III–V in *D. sphaeroidalis*.

***Dacus (Callantra) subsessilis* (Bezzi)**

(Fig. 33)

Mellessis subsessilis Bezzi, 1919: 435. Type locality: Culasi, Antique, Philippines. Holotype ♀ in MSNM.

Callantra subsessilis. – Hardy, 1974: 12–13; Hardy, 1977: 46.

Material examined

Philippines: holotype ♀, Panay, Culasi, vi.[19]18, McGregor (MSNM); 1 ♀, Culion I., 6 km W of Culion, 6.ii.1962, Malaise trap, H. Holtmann (BPBM).

Diagnosis

Large species; face with a pair of broad oval black spots; humeral calli and notopleura yellow; scutum black with red-brown around margins; lateral and medial postsutural vittae absent; anepisternal stripe broad; broad triangular marking along anterior margin of mesonotal suture; scutellum yellow with a narrow dark basal band; katatergite and anatergite mostly yellow; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* 1; wing with a broad fuscous costal band confluent with R_{4+5} and expanded into a diffuse apical spot that overlaps vein M, anal streak present, costal cells fuscous; legs mostly red-brown, tibiae paler and basal segment of all tarsi fulvous, no spines on fore femora; abdomen broadly petiolate, terga III–V red-brown with a medial longitudinal black vitta (Bezzi 1919); Hardy (1974) recorded the abdomen as having the sides of the terga broadly black and a broad black medial longitudinal vitta over terga II–V.

Attractant

No known record.

Distribution

Philippines (Culion, Panay).

Hosts

No known record.

Comments

Dacus (Callantra) subsessilis is similar to *D. (C.) calirayae*, *D. (C.) discophorus*, *D. (C.) lagunae*, *D. (C.) leongi* and *D. (C.) nummularius* in possessing a broad costal band confluent with vein R_{4+5} and expanding markedly at apex. It differs from *D. calirayae*, *D. discophorus* and *D. nummularius* in having the scutum mostly black and lacking a medial postsutural yellow vitta. *D. subsessilis* differs from *D. lagunae* and *D. leongi* in having the apical expansion of the costal band as a diffuse infuscation around the apical and hind margins of the wing and red-brown over the anterior part of the scutum.

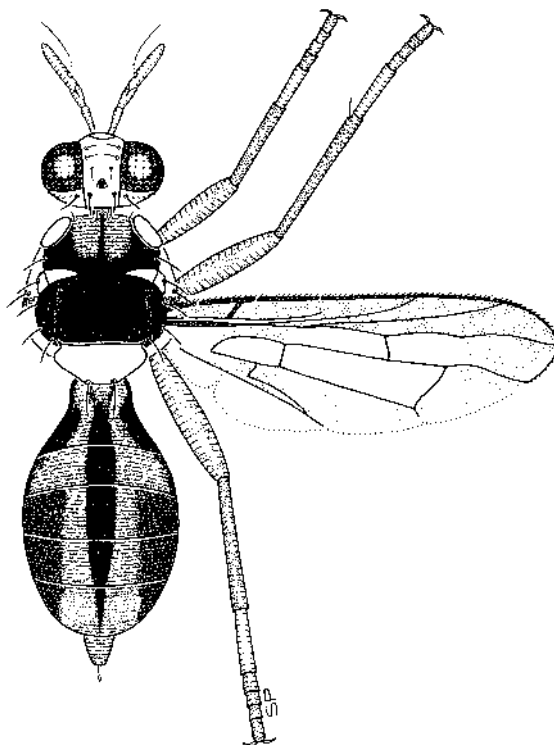


Fig. 33. *Dacus (Callantra) subsessilis* (Bezzi), female.

The specimen described by Hardy (1974) has been examined and found to differ as follows: wing with a fuscous tint, except for an ill-defined area centrally [not as distinct as indicated in fig. 5 in Hardy (1974)]; abdomen with tergum I slightly broader than long and sides of terga III–V broadly marked with dark fuscous, the whole abdomen with a continuous medial longitudinal broad black band. Figure 33 is based on this specimen.

Dacus (Callantra) tenebrosus Drew & Hancock, sp. nov.

(Fig. 34)

Material examined

Holotype. ♂, TN 9, Malaysia, 11.viii.1986, Yusoff Salleh, attracted to cue lure (BMNH).

Paratypes. **Malaysia:** 2♂, TN 9, 28.vii.1986 and 8.ix.1986, Yusoff Salleh, cue lure; 5♂, TN 9, 25.viii.1986, Yusoff Salleh; 2♂, TN 14, 25.viii.1986 and 4.v.1987, Ahmad Radzuan and Panjang Abd.; 1♂, TN 15, 18.v.1987, Ahmad Radzuan and Panjang Abd.; 1♂, TS 8, 1.vii.1986, Mahadzir; 1♂, Sungai Baging, 28.vii.1986, A. Samat Wahid. **Thailand:** Central Region: 2♂, Wang Jum Pee, A. Pakchong, Nakhonratsima, 21.viii.1992, 28.viii.1992, Montree, cue lure; 3♂, Phliu Hort. Station, A. Laemsingh, Chanthaburi, 9.vii.1992, 10.xii.1991, 4.ii.1992, Montree, cue lure; Chiang Mai: 4♂, N.R.D.C., 2.vii.1991, 20.viii.1991, 11.ix.1991, 30.vii.1992, Chantanee, cue lure. (4♂, ANIC; 6♂, BMNH; 10♂, QDPI; 1♂, DOAC.)

Description

Male

Head. Height 1.7 mm. Frons: length 1.5× breadth; red-brown, fulvous ventrally and, in some specimens, with pale fuscous around orbital bristles and on anteromedial hump; latter covered with a large number of small dark hairs; bristles black: 1 orbital; 2 frontals; lunule

fuscous. Ocellar triangle black. Vertex black. Face red-brown and usually with an inverted-U-shaped black pattern that is enlarged in the antennal furrows by connecting to the large oval facial spots (in some specimens there is a broad black band across the oral margin in addition to the normal marking); length 0.4 mm. Genae fulvous, small black subocular spot present; black seta present. Occiput red-brown with fuscous to dark fuscous ventrally, dorsocentrally and bordering the fulvous areas along the eye margins; occipital row with 6–9 black setae. Antennae with segment 1 fuscous, segments 2 and 3 dark fuscous to black; a strong black dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.6 mm; 0.6 mm; 1.04 mm.

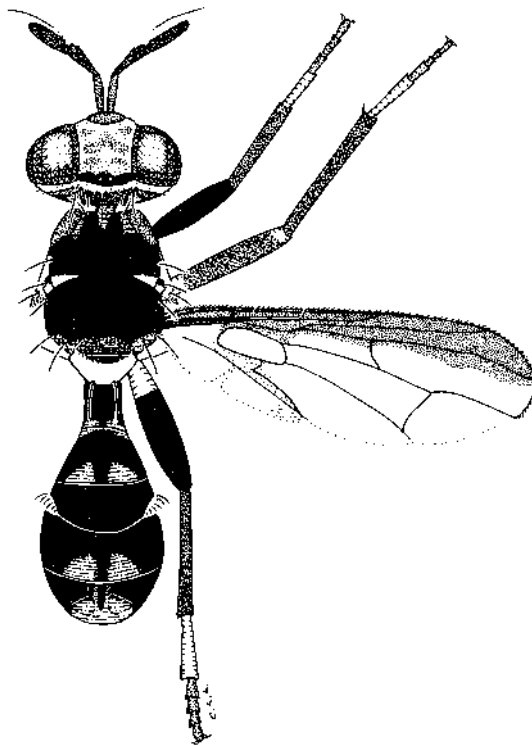


Fig. 34. *Dacus (Callantra) tenebrosus* Drew & Hancock, sp. nov., male.

Thorax. Scutum black with irregular fuscous markings on anterior and posterior margins. Pleura black with red-brown to dark fuscous below postpronotal lobes. Yellow markings as follows: notopleura (sometimes with patches of dark fuscous); anepisternal stripe reaching to anterior *npl.* bristle dorsally, narrowing ventrally and then continuing to katapisternum as a transverse spot, anterior margin strongly concave; a yellow band along anterior margin of mesonotal suture; anatergite (posterior apex black); anterior two-thirds of katatergite (remainder including ventral margin narrowly black). Postpronotal lobes patchy fuscous to dark fuscous (usually paler along ventral margin). Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for broad black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 2–4.

Legs. Fore and hind femora black and mid femora dark fuscous except fulvous basally on hind femora and basally and apically, in some specimens, on mid femora; tibiae dark fuscous; tarsi with basal segment fulvous and apical four segments fuscous; mid tibiae each with an apical black spur.

Wing. Length 7.0 mm; cells bc and c dark fuscous; dense microtrichia covering all of cell c and along costal margin of cell bc; remainder of wing colourless except dark fuscous cell sc, broad dark fuscous costal band overlapping R_{4+5} (narrowly so basal to r-m and more so apical to r-m) but not expanding apically; fuscous in cell cup but not forming a distinct anal streak; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. All terga black except orange-brown along intersegmental line between terga I and II either side of a narrow medial longitudinal black line, posterolaterally on terga II and IV either side of a broad medial longitudinal black band and narrowly margining the medial longitudinal dark fuscous band on anterior half of tergum V and then widening markedly over posterior region of this tergum (in some specimens there is a fuscous to dark fuscous band across anterior margin of tergum V, joining the broad black lateral margins). A pair of orange-brown oval shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Peninsular Malaysia; Thailand.

Hosts

No known record.

Comments

Dacus (Callantra) tenebrosus is similar to *D. (C.) siamensis* and *D. (C.) vijaysegarani* in possessing a broad costal band overlapping vein R_{4+5} , scutum, legs and abdominal terga mostly black, postpronotal lobes dark fuscous to black and face with an inverted-U-shaped dark pattern joined to a black band across oral margin. *D. tenebrosus* differs from *D. siamensis* and *D. vijaysegarani* in having the anatergite and katatergite mostly yellow and the scutellum with a broad black basal band.

Dacus (Callantra) trimacula (Wang)

(Fig. 35)

Callantra trimacula Wang, 1990: 68–69, 74–75. Type locality: Kunming, China. Holotype ♂ in ASB.

Dacus (Callantra) trimacula. – Liang *et al.*, 1993: 138.

Material examined

China: holotype ♂, Kunming, Yunnan, 9.viii.1984, Zhao Mingzhu; paratype ♂, Yuanjiang, Yunnan, 9.viii.1984, Zhao Mingzhu; paratype ♂, Luodian, Guizhou, 20.viii.1985, Luo Luyi; paratype ♂, Chongan, Fujian, 24.iv.1940; paratype ♂, Jinan, Shandong, 22.viii.1945 (all ASB); 1 ♂, Yunnan, ix.1984, cue lure (APQS).

Diagnosis

Large species; face with three black spots, two in the antennal grooves and one dorsocentrally below antennal bases; postpronotal lobes yellow; notopleura fuscous; scutum red-brown, tending fuscous posteriorly and with a narrow medial longitudinal dull black marking and two smaller dull black markings posterolaterally; lateral and medial postsutural vittae absent; anepisternal stripe of medium width; yellow triangular marking along anterior margin of mesonotal suture; scutellum yellow with a narrow dark basal band; setae: *sc. 2*, *prsc.* absent, *ia. 1*, *p.sa. 1*, *sa. 1*,

anepst. 1, *npl.* 2, *scp.* 4; wing with cells bc and c fuscous, a broad fuscous costal band overlapping R_{4+5} for entire length but not expanding apically, anal streak absent; femora mostly red-brown to fuscous, tibiae and tarsi fulvous, no spines on fore femora; abdominal terga III–V broadly dark fuscous to dull black laterally and fuscous medially, pecten present on tergum III.

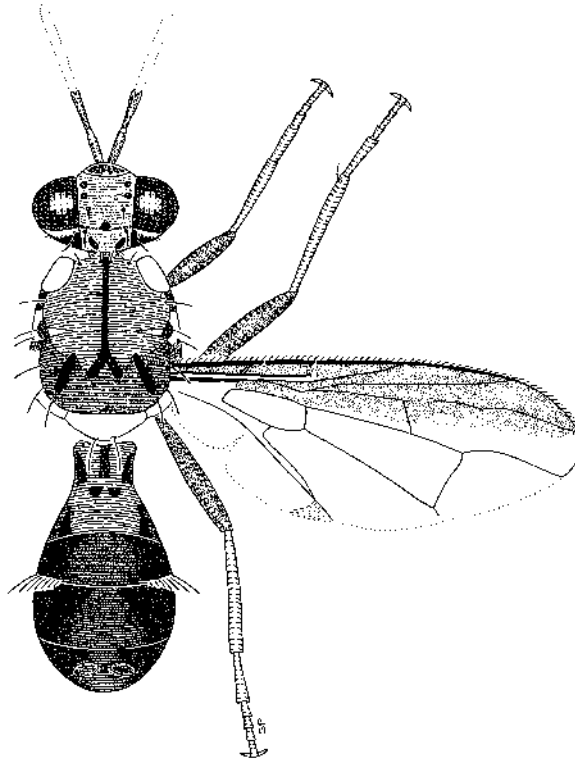


Fig. 35. *Dacus (Callantra) trimacula* (Wang), male.

Attractant

Cue lure.

Distribution

China (Yunnan, Guizhou, Fujian and Shandong Provinces).

Hosts

No known record.

Comments

Dacus (Callantra) trimacula is similar to *D. (C.) formosanus* in possessing a broad costal band almost confluent with vein M basally, the anal streak absent, abdominal terga III–V fuscous to black laterally without a medial longitudinal dark vitta, a fuscous anatergite and yellow katatergite. It differs from *D. formosanus* in having a red-brown scutum and abdominal terga III–V slightly paler.

Dacus (Callantra) vijaysegarani Drew & Hancock, sp. nov.

(Fig. 36)

*Material examined**Holotype.* ♂, TS 8, Malaysia, 12.i.1987, Mahadzir, attracted to cue lure (BMNH).

Paratypes. **Malaysia:** 1♂, TN 6, 29.xii.1986, Y. Salleh, cue lure; 2♂, TN 7, 1.xii.1986 and 15.xii.1987, Yusoff Salleh, cue lure; 2♂, TN 9, 6.x.1986 and 20.x.1986, Yusoff Salleh, cue lure; 1♂, 6.x.1986, Ahmad Radzuan and Panjang Abdullah, cue lure; 1♂, TN 14, 18.v.1987, Ahmad Radzuan and Panjang Abdullah, cue lure; 1♂, TS 8, 29.xii.1986, cue lure; 2♂, same data as holotype; 4♂, TS 8, 26.i.1987, Bahari, cue lure; 1♂, TS 9, 9.ii.1987, Bahari, cue lure; 1♂, TS 9, 12.9.1987, Mahadzir, cue lure. **Thailand:** 1♂, SK96KC, Ko Hong Hill [Songkhla district], 22.iii.1993, Anuchit and Sieng, cue lure. (4♂, ANIC; 6♂, BMNH; 7♂, QDPL)

*Description**Male*

Head. Height 1.5–1.7 mm. Frons: length 1.32× breadth; red-brown, dark fuscous on lower half of anteromedial hump and with or without small pale fuscous to dark fuscous areas around orbital bristles; anteromedial hump covered with small black hairs; bristles black: 1 orbital; 2 frontals; lunule red-brown. Ocellar triangle black. Vertex black. Face fulvous to red-brown with an inverted-U-shaped black pattern (formed by a broad black band across dorsal margin just below antennal bases joining the large oval black spots in the antennal furrows) and in some specimens a narrow black line across oral margin; length 0.40–0.48 mm. Genae red-brown, black subocular spot present; black seta present. Occiput black, fulvous along eye margins; occipital row with a large number of weak black setae. Antennae with all segments dark fuscous to black; no dorsal seta on segment 2; arista black (red-brown basally); length of segments: 0.64 mm; 0.64 mm; 1.08 mm.

Thorax. Scutum black with a narrow dark red-brown area along posterior margin. Pleura entirely black without distinct pale markings. Yellow markings as follows: a very short and narrow marking dorsally where the anepisternal stripe would normally occur (this usually runs from the ventral margin of the notopleuron to the level of the *anepst.* seta); a very narrow marking along anterior margin of mesonotal suture; anterior two-thirds of katatergite (remainder including ventral margin black). Postpronotal lobes dark fuscous to black. Notopleura black. Anatergite black. Lateral and medial postsutural vittae absent. Mediotergite black. Scutellum yellow except for a very narrow dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 2–4.

Legs. Femora and tibiae black except for a narrow dark red-brown apex on mid femora; fore tarsi fuscous to dark fuscous, mid and hind tarsi fulvous; mid tibiae each with an apical black spur.

Wing. Length 6.2–7.0 mm; cells bc and c dark fuscous; dense microtrichia covering all of both cells; remainder of wing colourless except for dark fuscous cell sc, broad dark fuscous costal band overlapping R₄₊₅ and of uniform width; anal streak absent; dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I and sterna I and II longer than wide. Tergum I fuscous to dark fuscous except orange-brown along both sides of intersegmental line with tergum II, a narrow medial and 2 narrow lateral longitudinal black vittae; terga II–V black except for small orange-brown to red-brown areas posterocentrally on terga IV and V. A pair of oval shining spots on tergum V that are black laterally and dark fuscous medially. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

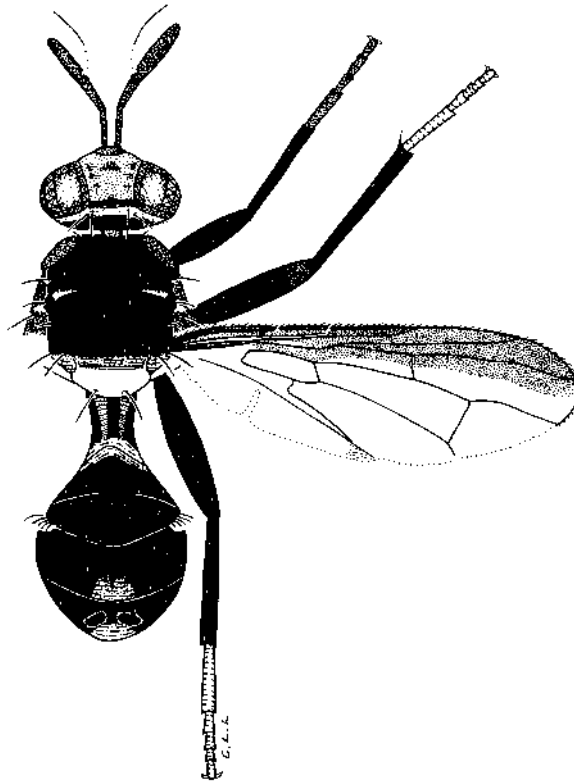


Fig. 36. *Dacus (Callantra) vijaysegarani* Drew & Hancock, sp. nov., male.

Distribution

Peninsular Malaysia; southern Thailand.

Hosts

No known record.

Comments

Dacus (Callantra) vijaysegarani is similar to *D. (C.) siamensis* and *D. (C.) tenebrosus* in possessing a broad costal band overlapping vein R_{4+5} , scutum, legs and abdominal terga mostly black, postpronotal lobes dark fuscous to black and face with an inverted-U-shaped dark pattern joined to a black band across oral margin. *D. vijaysegarani* differs from *D. tenebrosus* in having the anatergite black and from *D. siamensis* in having the notopleura black (not yellow).

This species is named after Dr S. Vijaysegaran, MARDI, Malaysia, in recognition of his contributions to fruit fly research in Malaysia.

Dacus (Callantra) vittatus (Hardy)

(Fig. 37)

Callantra vittata Hardy, 1974: 13–15. – Hardy, 1977: 46. Type locality: Agusan, San Francisco, Mindanao, Philippines. Holotype ♂ in BPBM.

Material examined

Philippines: holotype ♂, Agusan, San Francisco, 10 km SE, Mindanao, 14.xi.1959, L.W. Quate.

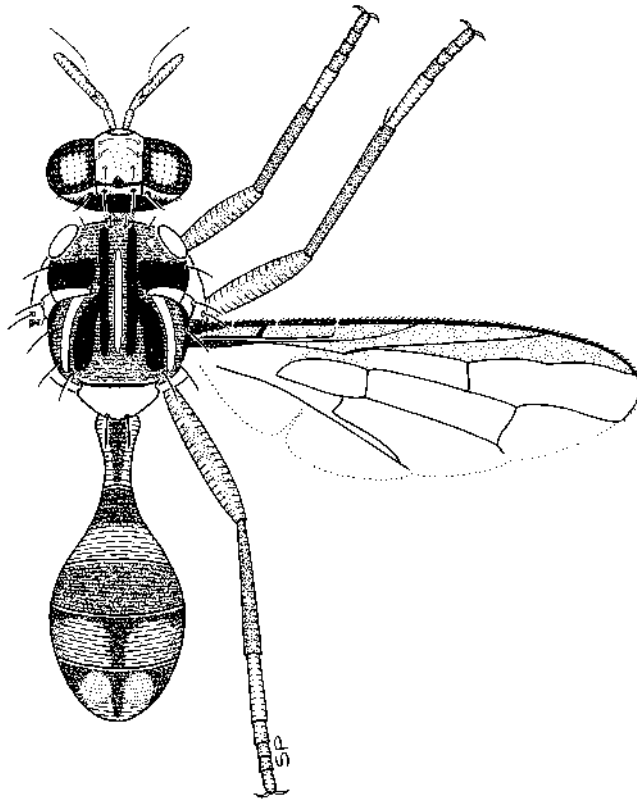


Fig. 37. *Dacus (Callantra) vittatus* (Hardy), male.

Description

Male

Head. Height 1.3 mm. Frons: length 1.2× breadth; fulvous except red-brown midline and across anteromedial hump; anteromedial hump covered with a few short black hairs; bristles black: 1 orbital; no frontals; lunule red-brown. Ocellar triangle black. Vertex black. Face fulvous with an irregular deep transverse black line across mouth and extending about half-way up to antenna bases. Genae fulvous with ill-defined fuscous subocular spot; black seta present. Occiput black with yellow along eye margins; occipital row with 6 small dark setae. Antennae with segment 1 and 2 fulvous, segments 3 fuscous; weak black dorsal seta on segment 2; arista black (pale basally); length of segments: 0.36 mm; 0.38 mm; 0.9 mm.

Thorax. Scutum red-brown with a pair of submedian black stripes, a pair of dorsocentral black stripes postsuturally and lateral black patches presuturally. Pleural areas generally black except red-brown below postpronotal lobes. Yellow markings as follows: postpronotal lobe; yellow spot lateral to postpronotal lobe; notopleura; anepisternal stripe reaching postpronotal lobe dorsally, extending to katepisternum as a very large transverse spot, anterior margin concave; broad triangular band along anterior margin of mesonotal suture and contacting narrow lateral postsutural vittae which incurve anteriorly; two lateral postsutural vitta reaching to intralar seta; medial postsutural vitta from centre of prescutum to two-thirds of way between suture and posterior margins of scutum; anatergite (posterior apex dark); anterior two-thirds of katatergite (remainder dark). Subscutellum and mediotergite black laterally, with fuscous midline. Scutellum yellow (base obscured by pin). Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 2.

Legs. Femora red-brown except basal quarter of mid femora fulvous; tibiae fuscous; tarsi with basal segments fulvous, remainder red-brown. Mid tibiae with apical black spur.

Wing. Length 7.0 mm; cells bc and c fuscous; dense microtrichia covering cell c and distal two-thirds of bc; remainder of wing hyaline except for dark fuscous cell sc and fuscous costal band which is confluent with R₄₊₅; some trace of expansion of costal band apically, but not into a distinct spot. No anal streak. Without dense aggregation of microtrichia around A₁+CuA₂. Supernumerary lobe weak.

Abdomen. Elongate and petiolate; terga fused; pecten absent. Tergum I almost 3x as long as width at posterior end (narrowest part); tergum II and sterna I and II all longer than wide. Tergum I fulvous, fuscous down midline; tergum II fuscous basally, fulvous apically; tergum III red-brown to fuscous; tergum IV fulvous, with broad fuscous midline and tending to red-brown laterally; tergum V fulvous with fuscous midline and anterolateral triangles. A pair of fulvous shining spots on tergum V. Sternum V with a slight concavity on posterior margin.

Attractant

No known record.

Distribution

Philippines (Mindanao).

Hosts

No known record.

Comments

Dacus (Callantra) vittatus belongs to a group of *Dacus (Callantra)* species that has a broad costal band confluent with vein R₄₊₅, anal streak absent and no preapical spines on the fore femora. It differs from all others in the group in having an elongate medial and two well-developed lateral postsutural yellow vittae.

***Dacus (Callantra) wallacei* White, sp. nov.**

(Fig. 38)

Callantra longicornis (Wiedemann, 1830). – Hardy & Adachi, 1954: 149 (misidentification).

Material examined

Holotype. ♂, Waai, Ambon I., Moluccas, Indonesia, 10.iii.1966, A.M.R. Wegner, California Academy of Sciences Acc 1972 (BPBM).

Paratype. **Indonesia:** 1♀, Ambon ii.[19]08 (BPBM). Recorded by Hardy and Adachi (1954, as *longicornis*).

Description

Male

Head. Height 1.7 mm. Frons: length 1.3× breadth; fulvous with indistinct darkening across anteromedial area but not on hump; bristles black: 1 orbital; no frontals; lunule fulvous and reasonably deep, 0.22 mm high. Ocellar triangle fuscous. Vertex fulvous. Face fulvous with indistinct, slightly elongate small facial spots; height 0.64 mm. Genae fulvous with no distinct subocular spot; black seta present. Parafacial with a large black spot between eye and ptilinal fissure, near to antenna base. Occiput fulvous with 2 irregular rows of fine pale occipital setae. Antennae fulvous; no strong seta on segment 2; arista black, pale basally; length of segments: 0.52 mm; 0.50 mm; 1.12 mm.

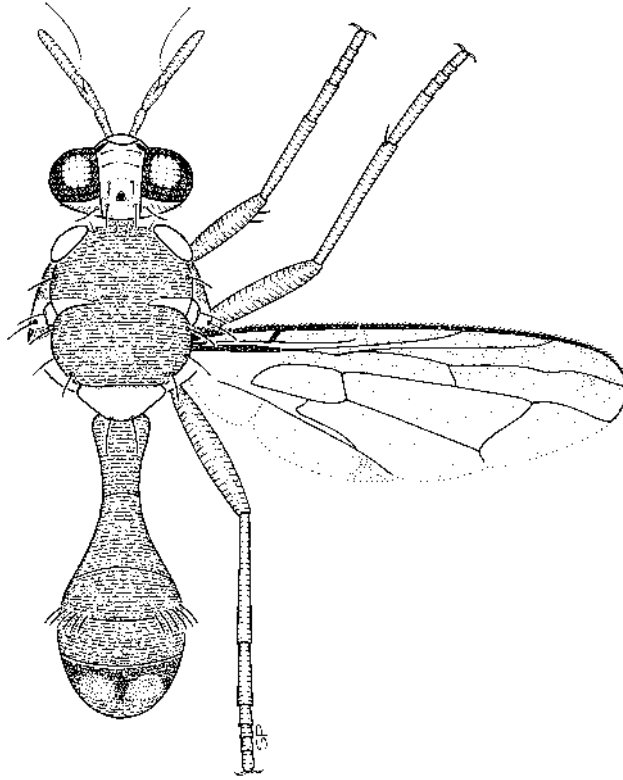


Fig. 38. *Dacus (Callantra) wallacei* White, sp. nov., male.

Thorax. Scutum red-brown. Pleura red-brown. Yellow markings as follows: postpronotal lobes (not much paler than scutum); notopleura; narrow wedges along anterior side of mesonotal suture; narrow anepisternal stripe, equal in width to notopleuron and not extended onto katepisternum; katatergite (except posterior apex). Anatergite red-brown. Lateral and medial postsutural vittae absent. Mediotergite and subscutellum red-brown. Scutellum yellow with diffuse red-brown basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p. sa.* 1; *sa.* 1; *anepst* 1; *npl.* 2; *scp.* not differentiated from general vestiture.

Legs. Femora red-brown; fore femora with 2 (right leg) to 4 (left leg) stout ventral spines; tibiae fulvous; mid tibiae each with a black apical spur; hind tibiae with preapical microtrichose bulge.

Wing. Length 7.3 mm; cells bc and c fuscous; dense microtrichia in cell c and most of cell bc (obscured by dirt: may be lacking at base); remainder of wing with a faint tint except fuscous narrow part of cell br, cell sc fuscous, a broad fuscous costal band extended below R_{4+5} approximately two-thirds towards vein M. No distinct anal streak; slight aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate, clavate and petiolate; terga fused; pecten present on tergum III. Tergum I about 2× as long as wide at narrowest part. Terga I–IV red-brown. Tergum V red-brown with a fuscous midline (covered with mould but some sign of a basal transverse line visible on slide of ♀); a pair of red-brown shining spots on tergum V. Posterior lobe of surstylus short, sternum V with a slight concavity on posterior margin.

Female

As for male except pecten absent, no hind tibia bulge, no aggregation of microtrichia around A_1+CuA_2 . Aculeus laterally compressed as in *D. petioliforma* (May); length 1.2 mm.

Attractant

No known record.

Distribution

Indonesia (Ambon).

Hosts

No known record.

Comments

Dacus (Callantra) wallacei is similar to and different from *D. (C.) conopsoides* in characters listed under the comments for *D. conopsoides*. The female used for this description (in BPBM) was placed previously in *Callantra longicornis* (Wiedemann) by Hardy and Adachi (1954) but *D. wallacei* differs from that species in having postpronotal lobes entirely yellow, spines on ventral surface of fore femora, a black spot between antennal base and eye margin on each side and abdominal terga of uniform pale coloration.

This species is named after Alfred Russell Wallace.

Subgenus *Dacus* Fabricius

Dacus Fabricius, 1805: 272. – See Drew, 1989: 17 for other listings. Type species: *Dacus armatus* Fabricius, 1805 (by subsequent designation of Speiser, 1924: 140).

Tridacus Bezzi, 1915: 86. – Hendel, 1927a: 24. Type species: *Dacus armatus* Fabricius, 1805 (by subsequent designation of Collart, 1935: 9).

Neodacus Perkins, 1937: 58. – May, 1963: 41–42. Type species: *Neodacus newmani* Perkins, 1937 (by monotypy).

Diagnosis

Subgenus *Dacus* contains species of *Dacus* that have a slight concavity on posterior margin of sternum V; prescutellar bristle absent; combined lengths of antennal segments equal to or less than vertical length of head; abdomen shape elongate-oval; anterior supra-alar bristles present or absent.

Hosts are unknown for all Asian species but are likely to be pods of Asclepiadaceae, as in Australian species (Drew 1989).

Dacus (Dacus) hainanus Wang & Zhao

(Fig. 39)

Dacus (Didacus) hainanus Wang & Zhao, 1989: 216, 219. – Liang *et al.*, 1993: 139. Type locality: Hainan I., China. Holotype ♂ in ASB.

Material examined

China: holotype ♂, Hainan I., Guangdong Province, 30.iii.1960, Li Chang-qing. **Thailand:** 1 ♀, nr Sai Yok, 500 m, Kanchanaburi, 11.ix.1975, H. Kurahashi (BPBM).

*Description**Female*

Head. Height 1.4 mm. Frons: length 1.25× breadth; fulvous with fuscous on anteromedial hump; latter with a few small black hairs; bristles black: 1 orbital; 2 frontals; lunule fuscous.

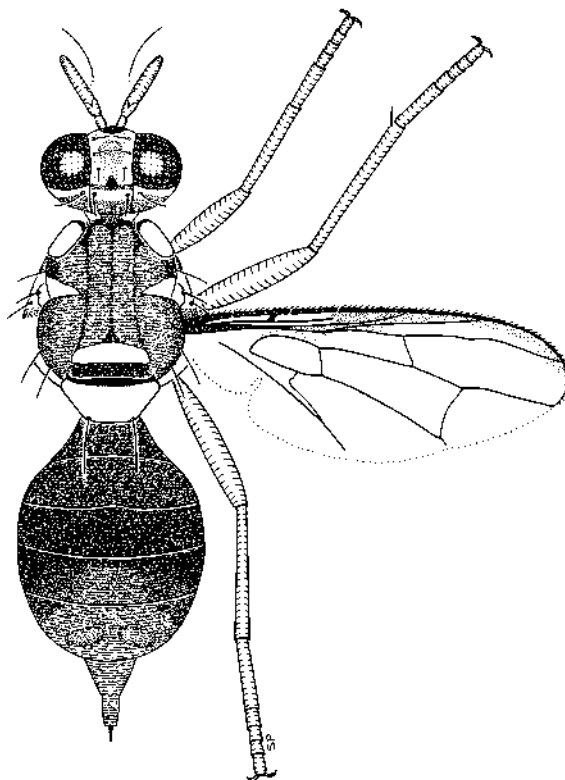


Fig. 39. *Dacus (Dacus) hainanus* Wang & Zhao, female.

Ocellar triangle black. Vertex fuscous. Face fulvous with a pair of large circular black facial spots; length 0.44 mm. Genae fulvous, fuscous subocular spot present; weak red-brown seta present. Occiput fuscous, fulvous along eye margins; occipital row with a large number of weak pale setae. Antennae with all segments fulvous except fuscous on apex of segment 3; a strong dark dorsal seta on segment 2; arista black (fulvous basally); length of segments: 0.16 mm; 0.25 mm; 0.68 mm.

Thorax. Scutum fuscous with irregular red-brown blotches representing sites of attachment of dorsoventral flight muscles; there are a medial and two lateral longitudinal narrow fuscous lines running full length of scutum. Pleura fuscous except red-brown in centre of katapisternum and below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; broad anepisternal stripe reaching to anterior *npl.* bristle dorsally, not extending onto katapisternum below, anterior margin slightly convex; broad triangular marking along anterior margin of mesonotal suture; a narrow transverse band across posterior region of scutum; anatergite (posterior apex fuscous); anterior five-eighths of katatergite (remainder fuscous). Lateral postsutural vittae absent. Mediotergite fuscous, tending red-brown centrally. Scutellum yellow except for a narrow dark basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* absent; *anepst.* 1; *npl.* 2; *scp.* 2.

Legs. All segments entirely fulvous; mid tibiae each with an apical black spur.

Wing. Length 5.2 mm; cells bc and c colourless; microtrichia in outer corner of cell c only; remainder of wing colourless except fuscous cell sc, narrow fuscous costal band confluent with R_{2+3} and expanding slightly across apex of R_{4+5} ; anal streak absent; no dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Oval; terga fused; pecten absent from tergum III (present in male). Tergum I and sterna I and II wider than long. Terga I and II fuscous to dark fuscous; tergum III dark fuscous; terga IV and V red-brown except for anterolateral corners of both terga fuscous to dark fuscous and a narrow medial longitudinal fuscous line over tergum IV and onto anterior portion of tergum V. A pair of oval red-brown shining spots on tergum V. Ovipositor basal segment red-brown, dorsoventrally compressed and tapering posteriorly in dorsal view; oviscape length 0.83× length of tergum V. Apex of aculeus needle shaped.

Attractant

No known record.

Distribution

China (Hainan Island); Thailand (Kanchanaburi).

Hosts

No known record.

Comments

Dacus (Dacus) hainanus is similar to *D. (Didacus) keiseri* and *D. (Didacus) ciliatus* in having the costal band narrow and confluent with vein R_{2+3} and wing cells bc and c colourless. It differs in possessing a transverse yellow band across the posterior region of the scutum.

***Dacus (Dacus) ortholomatus* Hardy**

(Fig. 40)

Dacus (Asiadacus) ortholomatus Hardy, 1982: 188–190. Type locality: Sadaunta, Central Sulawesi, Indonesia. Holotype ♂ in MBB.

Material examined

Indonesia: holotype ♂, Sadaunta, 65 km SE of Palu, Central Sulawesi, 650 m, Aug. 1975, D.E. & A.T. Hardy.

Diagnosis

Large species; wing length 8.5 mm; face with a pair of elongate black spots in antennal furrows; postpronotal lobes and notopleura yellow; yellow triangles along mesonotal suture with bases at notopleura; scutum red-brown with darker markings; lateral postsutural vittae absent; an elongate triangular medial postsutural vitta present; narrow anepisternal stripe present; scutellum yellow; setae: *sc.* 2, *prsc.* absent, *ia.* 1, *p.sa.* 1, *sa.* absent, *anepst.* 1, *npl.* 2; wing with a broad fuscous costal band slightly overlapping R_{4+5} and expanding over apex of wing to vein M, a broad fuscous anal streak, costal cells fuscous; legs fulvous tending pale fuscous on apical half of all femora; abdomen elongate-oval, terga fused, terga III–V fulvous medially tending red-brown laterally, a narrow dark fuscous to black medial longitudinal vitta over all terga, pecten present on tergum III.

Attractant

No known record.

Distribution

Indonesia (Sulawesi).

Hosts

No known record.

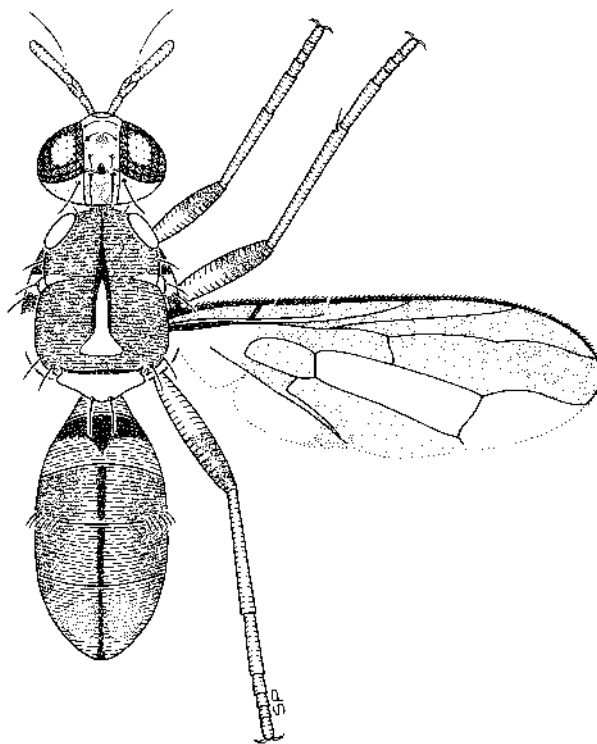


Fig. 40. *Dacus (Dacus) ortholomatus* Hardy, male.

Comments

Dacus (Dacus) ortholomatus was originally placed in subgenus *Asiadacus* by Hardy (1982). However, the terga are fused, which, together with the absence of *prsc.* and *sa.* bristles, confirms that this species belongs in *Dacus (Dacus)*. It is similar to *D. (Callantra) sphaeroidalis* in characters listed under the comments to that species. *D. ortholomatus* differs from *D. sphaeroidalis* in presence of a strong medial postsutural yellow vitta on the scutum, costal band overlapping vein R_{4+5} and a medial longitudinal black vitta on abdominal terga III–V.

Dacus (Dacus) santongae Drew & Hancock, sp. nov.

(Fig. 41)

Material examined

Holotype. ♂, Santong (450 m), Lombok, Indonesia, 2.vi.1981, J. Turner, attracted to cue lure (BMNH).

Description

Male

Head. Height 1.8 mm. Frons: length 1.75× breadth; fulvous with pale fuscous around orbital bristles and on anteromedial hump; latter with a few small pale hairs; bristles black: 1 orbital; 2 frontals; lunule pale fuscous. Ocellar triangle black. Vertex fulvous. Face fulvous with a pair of small circular dark fuscous spots; length 0.4 mm. Genae fulvous, fuscous subocular spot present; dark seta present. Occiput fuscous, fulvous along eye margins; occipital row with a large number of small pale setae. Antennae with segments 1 and 2 fulvous, segment 3 fulvous except fuscous on apex and outer surface; a weak pale dorsal bristle on segment 2; arista black (fulvous basally); length of segments: 0.28 mm; 0.32 mm; 0.68 mm.

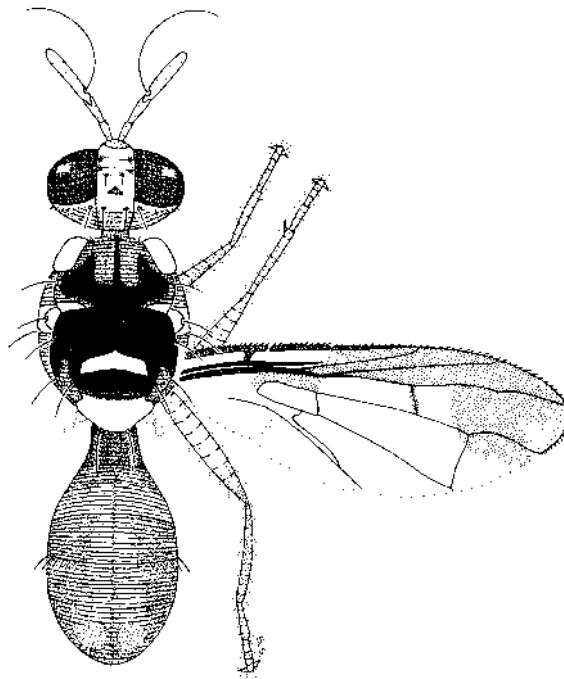


Fig. 41. *Dacus (Dacus) santongae* Drew & Hancock, sp. nov., male.

Thorax. Scutum black except red-brown around lateral and posterolateral margins, between postpronotal lobes and notopleura, along anterior margins of yellow triangles on mesonotal suture and across anterior margin. Pleura black except red-brown above mid coxae and below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; a broad yellow triangle along anterior margin of mesonotal suture; anepisternal stripe slightly wider than notopleura dorsally, extending to katapisternum below as a small transverse spot, anterior margin slightly convex; a unique broad triangular marking posteromedially on dorsal surface of scutum; anatergite (posterior apex black); anterior three-quarters of katatergite (remainder black). Lateral postsutural vittae absent. Mediotergite black except for a narrow medial red-brown band. Scutellum yellow except for a narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* 1; *anepst.* 1; *npl.* 2; *scp.* 4.

Legs. Femora fulvous except for a large diffuse fuscous spot on outer surfaces of fore femora and fuscous on apical third of hind femora; tibiae and tarsi fulvous except hind tibiae fuscous; mid tibiae each with an apical black spur.

Wing. Length 5.2 mm; cells *bc* and *c* fuscous; dense microtrichia covering both cells; remainder of wing colourless except for fuscous cell *sc*, broad fuscous costal band confluent with R_{4+5} and expanding into a large distinct spot in apex of wing; anal streak absent; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate oval; terga fused; pecten present on tergum III. Tergum I and sterna I and II wider than long (at least as wide as long). Terga I–V red-brown except for a diffuse medial longitudinal dark fuscous spot on tergum I, diffuse dark fuscous across anterior margin of tergum II but not reaching lateral margins, broad lateral longitudinal fuscous bands over terga III–V and a narrow medial longitudinal dark fuscous to black band over terga II–V. A pair of oval fuscous shining spots on tergum V. Posterior lobe of surstylus short and pointed, sternum V with a slight concavity on posterior margin.

Attractant

Cue lure.

Distribution

Indonesia (Lombok).

Hosts

No known record.

Comments

Dacus (Dacus) santongae is similar to *D. (Callantra) atrimarginatus*, *D. (C.) crabroniformis*, *D. (C.) maculipterus*, *D. (C.) ramanii*, *D. (C.) satanas* and *D. (C.) sinensis* in having the costal band confluent with or overlapping vein R_{4+5} and cells bc and c colourless. It differs from these species in having the costal band expanded into a large spot over the wing apex, a transverse yellow band over the posterior area of the scutum and shorter antennae.

Subgenus *Didacus* Collart

Didacus Collart, 1935: 33. – Drew, 1979: 74; Drew, 1989: 17. Type species: *Dacus (Didacus) ciliatus* Loew, 1862 (by original designation).

Diagnosis

Subgenus *Didacus* contains species of *Dacus* with a slight concavity on posterior margin of sternum V; prescutellar bristles absent; combined lengths of antennal segments equal to or less than vertical length of head; abdomen elongate-oval; anterior supra-alar bristles absent.

Hosts are primarily species of Cucurbitaceae.

Dacus (Didacus) ciliatus Loew

(Fig. 42)

Dacus ciliatus Loew, 1862: 7. Type localities: 'Guinea' and Cape, South Africa. Syntypes (♂, ♀) in NRS.

Dacus brevistylus Bezzi, 1908: 149. – Bezzi, 1914: 154; Bezzi, 1916: 101. Type localities: Dintorni di Adi Ugri and Cheren, Eritrea. Syntypes (♂, ♀) in MSNM.

Dacus (Bactrocera) cocciniae Premlata & Awtar Singh, 1988: 401, **syn. nov.** Type locality: Chandigarh, India. Holotype ♂ in PUC.

Dacus (Afrodacus) cocciniae. – Agarwal *et al.*, 1992: 20.

For additional synonymy see Munro (1984).

Material examined

Pakistan: 3♂, 3♀, Larkana, 16.vi.1963, bred from maggots in fruit of *Momordica charantia*; 1♂, 3♀, Sukkur, 20.v.1965, bred from maggots in fruit of *Luffa cylindrica* (all QDPI); 1♂, 1♀, Quetta, Baluchistan, 2.viii.1931, Y.R. Rao, from *Momordica* fruits (BMNH); 2♂, 2♀, Rawalpindi, 27.ix.1961, maggot in fruit of *Luffa acutangula* (BMNH). **India:** 2♀, Coimbatore, 26.vii.1946, P.S. Nathan, bred from snake-gourd; 1♀, Coimbatore, 25.v.1931, C.V.S., in cucumber; 1♀, Coimbatore, 1936, Cherian, in *Coccinia indica* fruits; 1♀, S. India, vi.1950, T.C. Lawrence & G. Beevor, ex *Cephalandra indica*; 1♂, Hessarghatta, S. India, v.1950, G. Beevor & T.C. Lawrence, ex cucurbit; 1♂, Bareilly, Uttar Pradesh, vi.1950, N.D. Waters, ex *Cucumis melo* var. *utilissimus* (all BMNH).

*Description**Male*

Head. Height 1.3 mm. Frons: length 1.5× breadth; red-brown, fulvous along eye margins, fuscous around frontal bristles and on anteromedial hump in some specimens; a few weak pale

hairs on anteromedial hump; bristles weak and red-brown: 1 orbital; 2 frontals; lunule fulvous. Ocellar triangle fuscous. Vertex red-brown. Face fulvous with a pair of small circular black spots; length 0.44 mm. Genae fulvous; red-brown seta present. Occiput red-brown, fulvous along eye margins; occipital row with a large number of weak pale setae. Antennae with all segments fulvous except fuscous on apex and outer surface of segment 3; a strong dark dorsal seta on segment 2; arista black (fulvous basally); length of segments: 0.16 mm; 0.24 mm; 0.72 mm.

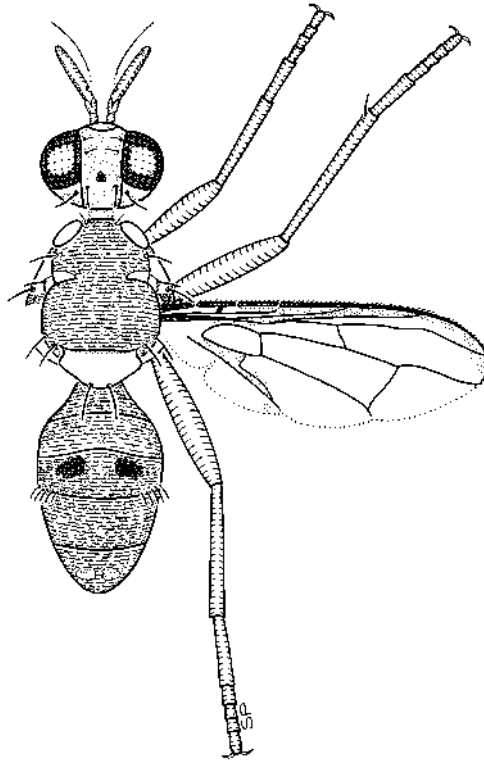


Fig. 42. *Dacus (Didacus) ciliatus* Loew, male.

Thorax. Scutum red-brown with erratic blotched patterns due to sites of attachment of dorsoventral flight muscles. Pleura red-brown without dark markings. Yellow markings as follows: postpronotal lobes; notopleura; broad anepisternal stripe reaching almost to position of anterior *npl.* seta dorsally, extending to katapisternum as a transverse spot, anterior margin slightly convex; a broad triangular marking along anterior margin of mesonotal suture and which surrounds the notopleuron; anterior three-quarters of katatergite (remainder red-brown). Anatergite red-brown. Lateral and medial postsutural vittae absent. Mediotergite red-brown. Scutellum yellow except for narrow red-brown basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* absent; *anepst.* 1; *npl.* 2 (anterior one very weak); *scp.* 3–4.

Legs. All segments entirely fulvous; mid tibiae each with an apical black spur.

Wing. Length 4.8 mm; cells bc and c colourless; microtrichia in outer corner of cell c only; remainder of wing colourless except fuscous cell sc, narrow fuscous costal band confluent with R_{2+3} and remaining narrow around costal margin until it expands into a small spot just beyond apex of R_{4+5} , narrow fuscous anal streak ending before wing margin; dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe only slightly developed.

Abdomen. Oval; terga fused; pecten present on tergum III. Tergum I and sterna I and II wider than long. Terga I and II red-brown with fulvous along posterior margin of tergum II. Terga III–V red-brown with large dark fuscous to black spots on anterior margin of tergum III midway between midline and lateral margins, and tending fuscous in anterolateral corners of tergum IV in some specimens. A pair of oval red-brown shining spots on tergum V. Posterior lobe of surstylus short and pointed, sternum V with a slight concavity on posterior margin.

Female

As for male except no dense aggregation of microtrichia around A_1+CuA_2 ; supernumerary lobe weak; no pecten present on abdominal tergum III. Ovipositor basal segment red-brown, dorsoventrally flattened and tapering posteriorly in dorsal view; oviscape length 0.25× length of tergum V.

Attractant

No known record; not attracted to known male lures.

Distribution

African continent; Mauritius; Iran; Pakistan; Bangladesh; India. Reports from Sri Lanka are based on misidentifications.

Hosts

Predominantly in Cucurbitaceae; occasionally or rarely in Solanaceae, Leguminosae and Malvaceae (Munro 1984). A major pest of economic crops.

Comments

Dacus (Didacus) ciliatus is similar to *D. (Dacus) hainanus* and *D. (Didacus) keiseri* in having a narrow costal band confluent with vein R_{2+3} and cells bc and c colourless. It differs from both in having a fuscous anal streak on the wing, from *D. hainanus* in lacking a medial yellow band on the scutum and from *D. keiseri* in having the scutum and abdomen red-brown. Asian specimens frequently show an indication of yellow on the lower part of the anatergite.

Dacus (Didacus) keiseri (Hering)

(Fig. 43)

Daculus keiseri Hering, 1956: 66. Type locality: Hingurakgoda, Sri Lanka. Holotype ♂ in NHMB.

Dacus (Polistomimetes) keiseri. – Hardy, 1977: 56.

Bactrocera keiseri. – White & Wang, 1992: 278.

Material examined

Sri Lanka: holotype ♂, Hingurakgoda, N.C.P., 20.xii.[19]53, F. Keiser (NHMB); 1♂, Tricomali, 3.ix.1891, Colonel Yerbury (BMNH); 1♀, Put[talam] District Kala-Oya, malaise trap, 1.viii.1975, Y-M. Huang, E.L. Peyton, S. Kurunaratne, Mahinda (NMNH); 1♀, Ham[bantota] District, Palatupana, 3–6.ii.1975, K.V. Krombein, P.B. Karunaratne, P. Fernando, E.G. Dabrera (NMNH); 4♀, Kiragolama, 20.iv.1995, ex Pasagilla (BMNH); 1♂, Kalakaradawe, 19.ii.1996, ex Pasagilla (BMNH).

Diagnosis

Small species with wing length 3.5 mm; face fulvous with a pair of small circular black spots; postpronotal lobes yellow; notopleura yellow; scutum black with red-brown markings; yellow triangular marking along anterior margin of mesonotal suture; anepisternal stripe broad and reaching to postpronotal lobes dorsally; anatergite and katatergite both yellow; all postsutural vittae absent; scutellum yellow; *prsc.* and *sa.* setae absent; abdomen with terga mostly black

except red-brown posterolaterally on tergum II and orange-brown medially from posterior margin of tergum III to tergum V, except for a narrow black medial band; pecten present on tergum III; wing with cells bc and c colourless, a very narrow costal band, broken in cell R_{2+3} , confluent with R_{2+3} and widening across apex of R_{4+5} , anal streak absent, supernumerary lobe weak, dense microtrichia present around apex of A_1+CuA_2 ; legs fulvous.

Attractant

No known record; apparently not attracted to known male lures.

Distribution

Sri Lanka.

Hosts

Bred from *Diplocyclos palmatus* (Cucurbitaceae) (K. Tsuruta, personal communication).

Comments

Dacus (Didacus) keiseri is similar to *D. (Dacus) hainanus* and *D. (Didacus) ciliatus* in possessing a narrow costal band confluent with vein R_{2+3} and wing cells bc and c colourless. It differs from *D. hainanus* and resembles *D. ciliatus* in lacking a medial yellow vitta on the scutum. It differs from *D. ciliatus* in having a predominantly black scutum and black patterns on the abdomen, and in lacking a fuscous anal streak on the wing. In many respects it resembles the African taxon *Karphodacus* Munro, currently placed as a synonym of subgenus *Didacus*.

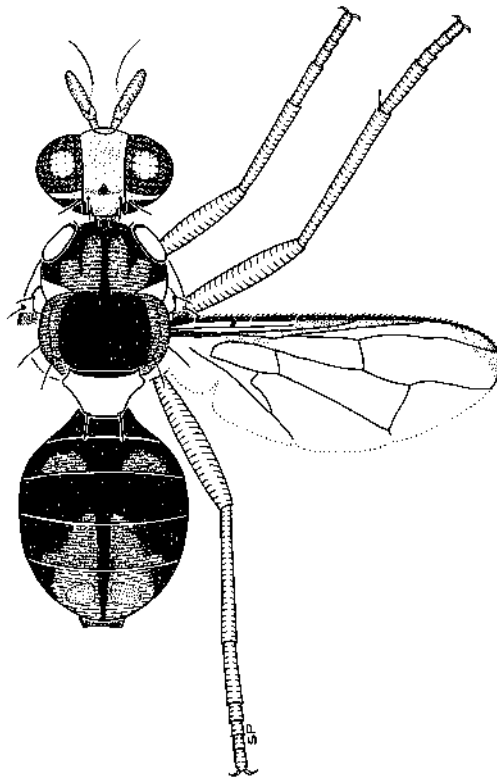


Fig. 43. *Dacus (Didacus) keiseri* (Hering), female.

Subgenus *Leptoxyda* Macquart

Leptoxyda Macquart, 1835: 452. – See Munro, 1984: 127 for other listings and synonymies. Type species: *Dacus longistylus* Wiedemann, 1830 (by monotypy).

Diagnosis

Subgenus *Leptoxyda* contains species of *Dacus* with a moderately deep concavity on posterior margin of sternum V; male surstyli moderately long and pointed; prescutellar bristles absent; supra-alar bristles absent; combined lengths of antennal segments equal to or less than vertical length of head; pecten absent from male abdominal tergum III; female ovipositor very long with oviscape twice as long as tergum V.

Hosts are pods of Asclepiadaceae.

Dacus (Leptoxyda) persicus Hendel, stat. rev.

(Fig. 44)

Dacus ferrugineus. – Becker, 1913: 641 (misidentification).

Leptoxyda sp. nr *longistyla* Bezzi, 1913: 92, pl. 8, fig. 1 (Karachi, Pakistan).

Dacus longistylus Wiedemann, 1830 (Asian records) (misidentifications by various authors).

Dacus (Leptoxyda) persicus Hendel, 1927a: 29. Type locality: 'Persich Belutschistan' [Iran]. Lectotype ♀ in BMNH.

Leptoxyda persicus. – Munro, 1984: 127 (as synonym of *D. longistylus*).

Material examined

Iran: lectotype ♀ (here designated) and 1♂ paralectotype, P. Beluchistan, 25.ii.1901 (BMNH). **Pakistan:** 2♂, 4♀, Karachi, CIBC, FF22, ix.1963, maggot in fruit of *Calotropis procera* (QDPI). **India:** 2♂, 6♀, Karnataka, Bangalore, 916 m, 9.x.1987, G. Bhat, bred from *Calotropis gigantea* (QDPI); 3♂, 6♀, Deesa, NW India, iii, iv, vii.1901, C.G. Nurse, BM 1934-8 (BMNH); 1♂, 2♀, Coimbatore, 8–22.xi.1945, P.S. Nathan (BMNH); 2♂, Poona Ghauts, Bombay Presidency, 1888 (BMNH); 1♀, Lyallpur, Punjab, 4.vii.1931 (BMNH); 1♂, Hyderabad, 5.xi.1971, A.C. Pont (BMNH). **Sri Lanka:** 8♂, 2♀, Tricomali, 8.vii.1890, 1–2.x.1890, 11.xi.1891, 8.xii.1891, Colonel Yerbury (BMNH); 1♂, 1♀, Tricomali, 14.vi.1907, Bainbrigge-Fletcher (BMNH); 1♀, Suduganga, 7.ii.1922, R. Senior-White, on *Calotropis procera* (BMNH).

*Description**Female*

Head. Height 1.4 mm. Frons: length 1.47× breadth; fulvous with an erratic pattern of dark fuscous; a few weak pale hairs on anteromedial hump; bristles black: 1 orbital; 2 frontals; lunule dark fuscous. Ocellar triangle black. Vertex red-brown. Face red-brown centrally, fulvous in antennal furrows and with a pair of small circular black spots; length 0.48 mm. Genae red-brown; pale fuscous subocular spot present; pale seta present. Occiput red-brown with erratic fuscous patterns centrally, fulvous along eye margins; occipital row with a large number of weak pale setae. Antennae with all segments fulvous except fuscous on apex and outer surface of segment 3; no dorsal seta on segment 2; arista black (fulvous basally); length of segments: 0.2 mm; 0.32 mm; 0.72 mm.

Thorax. Scutum dull black with a fine silvery pubescence and with red-brown postero-laterally, along anterior margin and as a narrow medial longitudinal line from anterior margin to medial yellow vitta. Pleura dull black except red-brown below postpronotal lobes. Yellow markings as follows: postpronotal lobes; notopleura; anepisternal stripe of medium width reaching midway between anterior margin of notopleuron and anterior *npl.* seta dorsally, extending to katepisternum as a transverse spot, anterior margin slightly convex; a triangular marking along anterior margin of mesonotal suture; a moderately broad medial longitudinal postsutural vitta; two very narrow lateral longitudinal postsutural vittae ending at or just before *ia.* seta; anatergite (posterior apices black); anterior two-thirds katatergite (remainder black). Mediotergite dark fuscous to black. Scutellum yellow except for narrow black basal band. Setae: *sc.* 2; *prsc.* absent; *ia.* 1; *p.sa.* 1; *sa.* absent; *anepst.* 1; *npl.* 2; *scp.* 2.

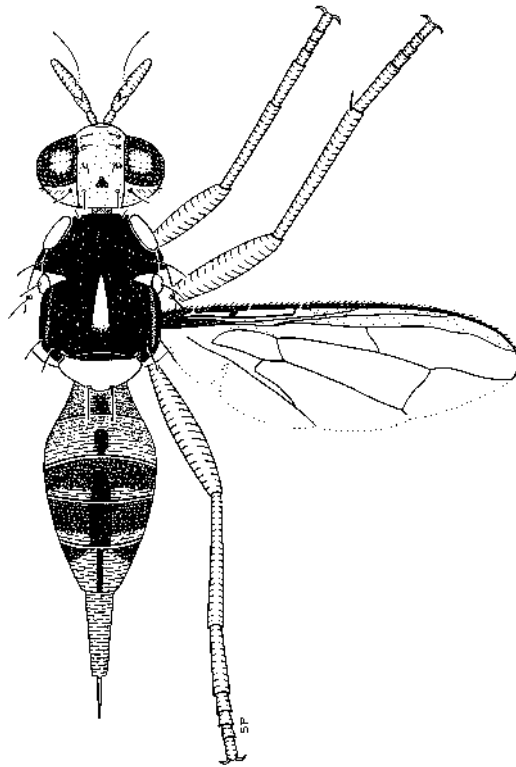


Fig. 44. *Dacus (Leptoxyda) persicus* Hendel, female.

Legs. Fore femora pale fuscous with dark fuscous on ventral surfaces, mid femora dark fuscous on basal half to three-quarters and entire ventral surface with fulvous basally, hind femora dark fuscous on apical half and fulvous basally; tibiae pale fuscous; tarsi fulvous; mid tibiae each with an apical black spur.

Wing. Length 5.3 mm; cells bc and c colourless; microtrichia in outer corner of cell c only; remainder of wing colourless except pale fuscous cell sc, pale fuscous costal band confluent with R_{4+5} and with a slightly darker fuscous spot at apex; cell cup with a pale fuscous tint in base. No dense aggregation of microtrichia around A_1+CuA_2 . Supernumerary lobe weak.

Abdomen. Elongate oval; terga fused; pecten absent from tergum III. Tergum I dark fuscous. Tergum II dark fuscous except for two large posterolateral fulvous spots. Terga III and IV dark fuscous except for the posterolateral margins narrowly fulvous. Tergum V fulvous except for the anterolateral corners dark fuscous and with a pair of large orange-brown shining spots. Ovipositor basal segment elongate and narrow, conical in transverse section, orange-brown; oviscapae length $1.75\times$ length of tergum V. Apex of aculeus broadly needle shaped.

Male

As for female except abdominal sternum V with a moderately deep concavity on posterior margin and posterior lobe of surstylus moderately long and narrow.

Attractant

No known record.

Distribution

Iran, Pakistan, India and Sri Lanka.

Hosts

Calotropis gigantea and *Calotropis procera* (Asclepiadaceae).

Comments

Dacus (*Leptoxyda*) *persicus* is a distinct species with an extremely long ovipositor basal segment (oviscape) and is remotely similar to *D.* (*Callantra*) *esakii* (part), *D.* (*Callantra*) *icariiformis* and *D.* (*Callantra*) *vittatus* in having a broad costal band, medial and lateral postsutural vittae. It differs from these species in having short antennae, a pair of black facial spots, a black scutum and in the absence of *sa.* bristles and spines on the fore femora.

Munro (1984) synonymised *D.* (*Leptoxyda*) *persicus* with *D.* *longistylus* Wiedemann but this does not appear to be justified. *D.* *persicus* is a smaller species with a shorter oviscape and lacks the brown apical spot of the costal band seen on the wing of *D.* *longistylus*. The latter species is restricted to Africa and Arabia; all Asian records belong to *D.* *persicus*.

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