

**FRUIT FLIES OF THE SUBTRIBE ACANTHONEVRINA OF
INDONESIA, NEW GUINEA, AND THE BISMARCK AND
SOLOMON ISLANDS (DIPTERA: TEPHRITIDAE:
TRYPETINAE: ACANTHONEVRINI)**

By D. Elmo Hardy

PACIFIC INSECTS MONOGRAPH 42

**Department of Entomology, Bishop Museum
Honolulu, Hawai'i, USA**

1986

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1. Journal Series No. 2886 of the Hawaii Institute of Tropical Agriculture and Human Resources.
2. Materials examined from the Bishop Museum are partial results of fieldwork supported by grants to the Museum from the U.S. National Science Foundation (G-2127, GB-518, GB-7330), the U.S. National Institutes of Health (AI-01723), and the U.S. Army Medical Research & Development Command (DA-MD-49-193-62-G65).
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Abstract. The subtribe *Acanthonevrina* is revised for Indonesia (including all of Borneo), New Guinea, and the Bismarck and Solomon islands. Forty seven genera (19 new), 3 subgenera (1 new), and 141 species (60 new) are keyed and described. The following are new synonyms: *Chaetomerella* = *Acanthoneura*; *Acanthoneura synopica* = *A. fuscipennis*; *A. lieftincki* = *A. nigrifacies*; *Cheesmanomyia unica* = *C. nigra*; *Clusiosoma semifusca* = *C. minutum*; *Dacopsis picturata* = *D. flava*; *Hexacimia flavipunctata* = *H. punctifera*; *Dirioxa setinervis* = *Hyponeothemara multistriga*; *Ptilona*

lateralis = *Kertesziola meritoria*; *Pseudacanthoneura septemnotata* = *P. sexguttata*; *Themara microcephala* = *T. ampla*; *T. montina* = *T. maculipennis*; *Rioxina* = *Themaroides*; *Clusiosoma tenuifemorale* and *Clusiomorpha adjusta* = *Trypanocentra (Clusiomorpha) nigripennis*. The following are new combinations: *Acanthoneura notabilis*; *A. nigrifacies*; *Heringomyia longiplaga*; *Hyponeothemara formosa*; *H. multistriga*; *Kertesziola acanthoneurides*; *K. meritoria*; *Nothoclusiosoma vittithorax*; *Pseudoneothemara exul*; *P. repleta*; *Themaroides abbreviatus*; *Trypanocentra (Clusiomorpha) funebris*; *T. (C.) nigripennis* and *Walkeraitia nivistriga*. The following are given new status: *Acanthoneura ceramensis*; *Clusiosomina*; *Neothemara trigonifera*; and *Trypanocentra (Clusiomorpha)*.

INTRODUCTION

This paper treats all known species of the Acanthonevrina of Indonesia (including all of Borneo), New Guinea, and the Bismarck and Solomon islands. This is an artificial grouping comprised of those genera previously treated as Acanthonevrini and differing from Gastrozonina (previously Gastrozonini) by having 6 or more scutellar bristles, rather than only 4. As I have discussed (Hardy 1980: 124), this character has no validity at the tribal level and is of questionable phylogenetic importance. It is, however, convenient as a grouping character for breaking the Acanthonevrini into manageable hierarchies.

The Acanthonevrina includes those genera of Trypetinae that have 6 scutellar bristles (8–12 in *Xarnuta* Walker) in combination with the following characters: moderate to long plumose arista; complete, or nearly so, complement of body bristles, usually strong intrapostalar and pteropleural bristles (except in the *Clusiosoma* and *Trypanocentra* complexes of genera); pleuroterga bare or with microscopic pubescence; portion of metathorax behind hind coxae semimembranous, slightly sunken in middle and not sclerotized; cell Cu distinctly lobate, sharply pointed at lower apex [except in *Sophiropsis*, n. gen. (Fig. 83b)]; female with 3 spermathecae; spiracular openings arising basoventrally on 7th abdominal segment (in genera that have been checked); and typically vanes of male aedeagal apodeme fused for most of their length and separated into a short Y at apices. In addition, the scutellar bristles are usually strong and approximately equal in size. In some the secondary bristles are poorly developed and may be represented by hairlike setae clearly differentiated from the setae on the disc and margin of the scutellum.

The phylogenetic importance of the genital characters, both male and female, is not understood. The reproductive systems of comparatively few genera have been studied carefully. Most males of genera treated in this study have the vanes of the aedeagal apodeme fused, very similarly to those of *Phytalmia* Gerstaecker (cf. McAlpine & Schneider 1978). McAlpine & Schneider (loc. cit.) considered the fused vanes of the male aedeagal apodeme a most important character in distinguishing the tribe Phytalmini. I question the significance of this character (Hardy 1983: 228); fused vanes are typical of most Acanthonevrina studied (Fig. 17b), but *Enoplopteron* de Meijere, *Hexacinia* Hendel, *Hyponeothemara*, n. genus, *Mimoeuphranta*, n. genus, and *Xarnuta* have widely forked vanes that rise separately from the axis of the apodeme (Fig. 118d), similar to *Dacus* Fabricius and *Adrama* Walker. In most but not all genera of the Gastrozonina, the vanes are widely forked.

The relationships among the genera and species of Trypetinae are poorly understood; many taxa are known from just a few specimens or, often, a unique specimen.

We still have no satisfactory way of collecting most trypetines; we don't know where they live, have only scanty knowledge of their biology or habits, and have no satisfactory lures or attractants for sampling faunas. In the tropics the preponderance of species is associated with primary forests. It is highly probable that many or most species are canopy breeders and inhabitants.

As noted above, the weakest link in our knowledge of Tephritidae is the scantiness of biological data. For genera of the Acanthonevrina, only a few host associations have been made. The common name "fruit flies" is obviously inappropriate for this group. To date for the region covered in this study only 2 genera (*Clusiosoma* Malloch and *Cheesmanomyia* Malloch) are known to infest fruits; species of these genera breed in native *Ficus*. It is evident that native *Bambusa* provides one of the most important host plants utilized by Acanthonevrini. To date ca. 15 genera of Acanthonevrini have been associated with bamboo throughout the Oriental and Australasian regions, 8 of which are Acanthonevrina from Indonesia and New Guinea: *Polyara* Walker has been reared from young shoots of bamboo, and species of *Enoplopteron* de Meijere, *Kerteziola* Hering, *Othniocera*, n. gen., *Paraphasca*, n. gen., *Phasca* Hering, *Themarohystrix* Hendel, and *Themaroides* Hendel have been collected in bamboo thickets and probably use bamboo as a host. One species of *Dacopsis* Hering breeds in thick, stringy bark of fallen *Dysoxylum* trees, 1 species of *Diarrhegma* Bezzi has been reared from decaying wood, 2 species of *Rioxa* Walker have been collected hovering over tree buttresses, and 1 species of *Themara* Walker, which may breed in rotting bark, has been collected on the bark of fallen trees. The type-species of *Termitorioxa* Hendel has been bred from galleries of *Mastotermes* in tree trunks in northern Australia (Hill 1921). The strangest association known for a "fruit fly" is that of *Alloeomyia flavida*, n. sp., from Papua New Guinea, which has been collected only in traps baited with human feces.

When checking out unknown genera of Trypetinae, considerable time can be saved by first checking to see whether the pleuroterga are haired or bare. The genus *Euphranta* Loew exhibits such a wide range of wing markings that it may superficially resemble some Acanthonevrini.

DEPOSITORIES

The following acronyms are used for institutions where collections are located.

AMS	Australian Museum, Sydney
ANIC	Australian National Insect Collection, CSIRO, Canberra
BMNH	British Museum (Natural History), London
BPBM	Bernice P. Bishop Museum, Honolulu
CAS	California Academy of Sciences, San Francisco
CIHS	Commonwealth Institute of Health, University of Sydney, Australia
DEI	Institute für Pflanzenschutzforschung (formerly Deutsches Entomologisches Institut), Eberswalde, DDR
DPIK	Department of Primary Industries, Konedobu, Papua New Guinea
FRSB	Forest Research Station, Bulolo, Papua New Guinea
IZAS	Institute of Zoology, Academia Sinica, Beijing (Peking), China
MNHP	Museum National d'Histoire Naturelle, Paris

MSNG	Museo Civico de Storia Naturale, Genoa
MZB	Museum Zoologicum Bogoriense, Bogor
NHMB	Naturhistorisches Museum, Basel
NHNV	Naturhistorisches Museum, Vienna
PIZW	Polska Akademia Nauk Instytut Zoologiczny, Warsaw
RNHL	Rijksmuseum van Natuurlijke Historie, Leiden
SMNS	Staatliches Museum für Naturkunde, Stuttgart (Ludwigsburg)
TMB	Természettudományi Múzeum, Budapest
UH	University of Hawaii, Honolulu
UMO	University Museum, Oxford University, Oxford
UQM	University of Queensland Museum, St. Lucia
USNM	National Museum of Natural History, Smithsonian Institution, Washington, D.C.
ZMHB	Zoologisches Museum, Humboldt Universität, Berlin
ZMUA	Zoologisch Museum, Universiteit van Amsterdam
ZMUC	Zoologisk Museum, Universitets Copenhagen
ZMUH	Zoologische Institut und Zoologisches Museum, Universität von Hamburg, Hamburg
ZSIC	Zoological Survey of India, Calcutta

ACKNOWLEDGMENTS

This work has been made possible by National Science Foundation Grant No. DEB-8019307 and is published with support of National Science Foundation Grant No. BSR 84-14915. This financial support has been greatly appreciated.

I express sincere thanks to all of the institutions where collections have been studied and/or from which specimens were borrowed as listed in the acronyms above, with special appreciation extended for the assistance proffered by the following colleagues: Brian Cogan (BMNH); D.H. Colless (ANIC); R.H. Foote (USNM); J.W. Ismay (DPIK); Th. van Leeuwen (ZMUA); J.T. Nowakowski (PIZW); H. Roberts (FRSB); R.C. Russell (CIHS); H. Schumann (ZMHB); and A. Smith (UMO).

The illustrations have been prepared by Marianne Early, Diane Masuda, Sui Yin Pun, and Gwen Yoshimura. The manuscript typing was done by Nano Takuma. The meticulous work done by these students at the University of Hawaii adds greatly to the value of this study, and I am deeply grateful for their help. I am also grateful to Maria Au Hoy for typing the final draft. The cover illustration is by Michelle Chun.

SYSTEMATICS

KEY TO GENERA OF THE ACANTHONEVRINA

1. Wing venation normal, no spur veins on R_{2+3} , cells R_1 and R_3 not divided 2
 Vein R_{2+3} with a short spur vein connecting vein R_1 just before apex, a crossvein connecting with R_{4+5} near middle of wing and another connecting with R_{4+5} just beyond r-m; crossvein r-m near m (Fig. 66b) **Polyara**
- 2 (1). Costal margin with numerous strong spines extending to about level with m crossvein; wing as in Fig. 35d, 36 **Enoplopteron**
 Not as above 3

- 3 (2). Six scutellar bristles, secondaries sometimes short, rudimentary, in some species of *Themaroides* with 2 pairs of small secondary scutellars; arista long plumose; 2 pairs inferior fronto-orbital bristles situated close together near lower edge of front 4
 Eight to 10 strong scutellars; arista very short plumose; 3 pairs inferior fronto-orbitals on lower 2/3 of front; short, rather thick bodied flies **Xarnuta**
- 4 (3). Only veins R₁ and R₄₊₅ setose above 5
 In addition to above veins M₁₊₂ or M₃₊₄ and/or straight basal portion of vein Cu setose; wing often predominantly or entirely dark brown 42
- 5 (4). Sternopleurals present 6
 Sternopleurals absent; wing as in Hardy (1980: Fig. 17a, 18, 19) **Dacopsis**
- 6 (5). Mesopleuron with 1 prominent black bristle near lower median margin; wing dark brown, with numerous small subhyaline spots throughout field, broad, ca. 2× longer than wide, *Platensina*-like in *Hexacinia*, entirely dark brown and normal in shape in *Paedohexacinia*, n. gen. 7
 Mesopleuron lacking bristle on lower median portion; or, if with small bristle as in some *Neothemara*, wing not as above 8
- 7 (6). Wing broad, *Platensina*-like, with small subhyaline spots throughout (Fig. 41a); arista long plumose; thorax with numerous small brown spots; head and thoracic bristles mostly yellow, tinged brown **Hexacinia**
 Wing normal in shape, entirely dark brown; arista bare ventrally; thorax entirely yellow; all bristles black **Paedohexacinia**, n. gen.
- 8 (7). Third antennal segment normal, extending 2/5-2/3 length of face 9
 Third antennal segment of both sexes greatly enlarged, unusually broad in both sexes (Fig. 56c), ca. as long as face, equal in width to 1/2 eye height.....
 **Othniocera**, n. gen. (in part)
- 9 (8). Only 1 pair of inferior fronto-orbital bristles 10
 Two or 3 pairs of strong inferior fronto-orbitals 19
- 10 (9). Arista plumose, 1 dorsal and 1 ventral row of moderately long hairs 11
 Arista with 2 dorsal rows, ventral margin bare (Fig. 83a); only 1 superior fronto-orbital; no intrapostalar; lobe of cell Cu very short; wing as in Fig. 83b
 **Sophiropsis**, n. gen.
- 11 (10). Only 2 pairs of frontal bristles; 1 each of widely spaced superior and inferior fronto-orbitals; wing with hyaline wedge from margin in cell R₁; dorsocentral bristles posterior in position near prescutellars 12
 With 2 pairs of superior fronto-orbitals; usually more than 1 pair of inferior bristles 13
- 12 (11). Vein R₂₊₃ and crossvein m straight; 2 strong subequal spurs on mid tibia; face straight except slight projection at oral margin; bases of antennae separated by almost width of 1st segment; wing hyaline or subhyaline basad of forking of vein R₂₊₃ and R₄₊₅ **Termitorioxo**
 Vein R₂₊₃ undulate, m crossvein bowed outward (Fig. 39); 1 strong and 1 short spur on mid tibia; face moderately concave in middle; bases of antennae approximate; dark brown mark on wing basad of forking of vein R₅ **Heringomyia**, n. gen.
- 13 (11). Wing with extensive brown markings; ocellar bristles small, setalike or absent; r-m crossvein near middle or at apical 2/3 of cell 1st M₂ 14
 Wing brown only at extreme apex and in cell Sc (Fig. 122); ocellar bristles strong; r-m at basal 1/3 of 1st M₂ **undescribed genus A**
- 14 (13). With 2 well-developed superior fronto-orbital bristles; sternopleural bristles strong;

- dorsocentrals ca. 1/2 between supraalars and postalars or in line with supraalars; prescutellars present 15
- Upper superior fronto-orbitals weak, setalike, lower pair widely spaced below middle of front; sternopleural bristles weak, ca. equal in size to setae on lower margin of sternopleuron; dorsocentrals almost in line with postalars; prescutellars absent; head, thorax, and abdomen shining black; sterno and hypopleura bright yellow; mesonotum finely sculptured, punctulate; wing as in Fig. 82b ..
..... **Saucromyia, n. gen.**
- 15 (14). Vein R₄₊₅ gently convex beyond r-m crossvein; last section of M₁₊₂ straight (Fig. 5, 15a) 16
- Apical sections of vein R₄₊₅ and M₁₊₂ strongly arcuate (Fig. 54b, 84f) 18
- 16 (15). Intrapostalar bristles lacking; 1 strong apical spur on mid tibia; superior fronto-orbital bristles well spaced, lowers at or below middle of front; scutellum bare or with a few setae on sides 17
- Intrapostalars well developed; 2 strong spurs on mid tibia; scutellum conspicuously setose on sides; superior fronto-orbitals approximate on upper 1/4 of front; thorax mostly or entirely yellow; wing as in Fig. 45, 46, 47f **Kertesziola** (in part)
- 17 (15). Third costal section ca. equal in length to 2nd; face concave medially (Fig. 4d); r-m crossvein near apical 2/3 of cell 1st M₂; wing without numerous hyaline spots around margin (Fig. 2, 5); ♂ front leg usually ornate (Fig. 8b)
..... **Acanthonevra** (in part)
- Third costal section much shorter than 2nd; face straight on upper 2/3, slightly projected above oral margin; r-m crossvein slightly before middle of 1st M₂; wing with numerous hyaline spots (Fig. 15a) **Anchiacanthonevra, n. gen.**
- 18 (15). Vein R₂₊₃ strongly convex in middle; 3rd costal section subequal to 2nd; 4th section equal to 5th; large hyaline wedge from costa in 2nd costal cell to m-cu crossvein; lobe of cell Cu longer than vein Cu_{1+1st A} (Fig. 84f); 3rd antennal segment ca. 1/4 as wide as face; thorax polished black with white longitudinal vittae; intrapostalar bristles small **Stigmatomyia, n. gen.**
- Vein R₂₊₃ nearly straight; 3rd section ca. 1/2 length of 2nd; 4th nearly 2× 5th; basal portion of wing mostly hyaline; lobe of Cu about 2/3 as long as Cu_{1+1st A}; thorax yellow, 4 pale brown vittae on mesonotum; intrapostalars strong
..... **Othniocera, n. gen.** (in part, *O. aberrans*, n. sp.)
- 19 (9). Only 1 strong spur at apex of mid tibia, secondary spur distinctly short, usually not much larger than spinules at apex of tibia; sometimes 2nd spur is 1/2 to 3/5 length of main spur 20
- Two strong black subequal spurs on mid tibia 37
- 20 (19). All head and body bristles yellow except for outer verticals and occipital row 21
- All bristles black 23
- 21 (20). Wing dark brown, numerous small irregular subhyaline spots scattered throughout median portion (Fig. 32b) **Cribrorioxa**
- Not as above; wing with oblique brown bands or arches (Fig. 123) on apical 1/2 22
- 22 (21). Wing with 2 oblique brown bands through apical 1/2; costal spine small; intrapostalar bristles absent; face black on lower median portion; thorax with black spot behind each humerus that connects with vertical black stripe on pleuron; large semicircular black mark on posterior 1/2 of mesonotum **Tritaeniopteron**
- Wing with 2 yellow-brown arches in apical 1/2 (Fig. 123); costal spine strong, length equal to or longer than upcurve of vein Sc; intrapostalars strong; thorax

- yellow, 4 small black spots on hind margin, pair of pale brown submedian vittae, faint spot of brown above each humerus **undescribed genus B**
- 23 (20). Prescutellar bristles present; wing with extensive brown markings (Fig. 73a, 78) 24
 Prescutellars absent; wing mostly hyaline, narrow brown costal band around apex, transverse brown band at level of m crossvein; thorax mostly dark brown to black, dusted gray pollinose; yellow on humerus, median portion of scutellum, and posteromedian portion of mesonotum **Mimoeuphranta, n. gen.**
- 24 (23). Subcostal vein arched upward; cell Sc elongate, much longer than 2nd costal cell; vein R₁ ending nearly opposite m crossvein, well beyond r-m crossvein; vein R₄₊₅ bent upward at end, not arched in middle; wing of Indonesian species dark brown with small hyaline marks around margin (Fig. 80d); thorax elongate; arista with 2 rows of dorsal hairs, bare ventrally **Rioxa**
 Not as above 25
- 25 (24). Vein R₂₊₃ curved sharply upward at ca. level with m crossvein, extending to costa at ca. 60° angle; wing with numerous rays of brown extending to margin (Fig. 73a), much as in *Rhabdochaeta* **Quasirhabdochaeta, n. gen.**
 Not as above 26
- 26 (25). Face in profile vertical, oral margin receding (Fig. 38a) 27
 Face in profile concave, oral margin projecting (Fig. 14b) 32
- 27 (26). Intrapostalar bristles well developed 28
 Intrapostalars lacking 31
- 28 (27). Scutellum bare 29
 Scutellum setose at least on sides and usually on disc; propleura with black bristle-like setae; thorax yellow, black vittae on mesonotum and pleura; wing as in Fig. 50b, 51b & 52 **Neothemara (in part)**
- 29 (28). Ocellar bristles small, setalike; vein R₄₊₅ gently convex throughout most of its length beyond r-m crossvein 30
 Ocellars strong, length equal to or longer than upper superior fronto-orbitals; wing moderately long, slender, basal 2/3 of R₄₊₅ straight, curved gently downward at apical 1/3, brown with small hyaline marks around margin and in field (Fig. 70); thorax rufous with a few small brown spots .. **Pseudacanthoneura (in part)**
- 30 (29). Thorax mostly black, yellow to white vittae on mesonotum; wing with large hyaline markings on margin and in field (Fig. 60b, 64, 65) **Phasca**
 Thorax yellow; wing with small scattered hyaline spots (Fig. 50b)
 **Neothemara (in part, *N. digressa*, n. sp.)**
- 31 (27). Arista long plumose; veins R₄₊₅ and M₁₊₂ only gently convex; antennae short, ca. 1/3 as long as face; palpi bristly (Fig. 38a); costal spines small, ca. 2× size of costal setae; dorsocentral bristles closer to postalars than to supraalars; front and hind femora with unusually long ventral bristles; wing as in Fig. 38c
 **Gressittidium, n. gen.**
 Arista bare ventrally; veins R₄₊₅ and M₁₊₂ moderately convex beyond r-m and m crossveins; palpi with normal bristles and setae; costal spine strong, length ca. equal to uncurved section of vein Sc; dorsocentrals anterior to supraalars; femora with normal bristles; wing as in Fig. 34b **Diarrhegmoides**
- 32 (26). Mid and hind femora without black ventral spicules; arista long plumose 33
 Mid and hind femora with anteroventral and posteroventral spinules on apical 1/3 and 1/2, respectively; wing markings *Callistomyia*-like, curved brown crossband at r-m crossvein and large brown preapical mark filling cell 2nd M₂ and apical portion of R₅ (Fig. 13b); arista short plumose (Fig. 13a) .. **Alincocallistomyia, n. gen.**

- 33 (32). Lacking intrapostalar bristles 34
 Intrapostalars well developed 35
- 34 (33). Mesonotum yellow with 1 or 3 black longitudinal vittae; wing mostly hyaline; no hyaline wedges on anterior margin, 2 brown arches in apical 1/2
 **Sophira (Parasophira)** (in part, [(Gastrozonina) *S. (P.) biangulata*])
 Thorax mostly or entirely rufous, with not more than faint brownish markings on mesonotum, no distinct vittae; wing mostly black, hyaline wedges on anterior and posterior margins, 1-3 small round hyaline spots in cell R₅ (Fig. 2, 11) ...
 **Acanthonevra** (in part)
- 35 (33). Pteropleural bristles strong, black, equal to or larger than mesopleural or sternopleural bristles; mesonotum with prominent brown to black markings; scutellum all bare 36
 Pteropleurals small, scarcely differentiated from other setae on pteropleuron; thorax yellow, small black spot behind each wing base (not visible if wings are held erect); scutellum with a few setae on each side; large hyaline wedge in middle of anterior margin of wing, 3 hyaline spots in cell R₅ and 3 marks in cell 2nd M₂ (Fig. 14a) **Alloeomyia, n. gen.**
- 36 (35). Wing with complete brown crossband at level with cell Sc; brown band at r-m crossvein not continuous with subapical brown arch (Fig. 59b); mesonotum brown only on posterior border; dorsocentral bristles in line with supraalars ..
 **Paraphasca, n. gen.**
 Wing with 3 hyaline marks on anterior margin (Fig. 44d), or with anterior margin entirely dark brown; long, narrow, hyaline streak through apex of cell R₅ (Fig. 43); mesonotum with black, U-shaped mark over hind 2/5, with submedian black vittae or black spots (Fig. 44c); dorsocentrals halfway between supraalars and postalars **Hyponeothemara, n. gen.**
- 37 (19). Thorax without large, bare, white spot on hind portion of mesonotum and scutellum; setose on all of mesonotum and at least sides of scutellum 38
 Scutellum bare on disc; large white spot covers hind portion of mesonotum and scutellum, otherwise bare; wing with hyaline wedges from anterior and posterior margins, a few hyaline spots in middle (Fig. 33c); head narrow, nearly 2× higher than long (Fig. 33a); face straight **Diarrhagma**
- 38 (37). Wing with complete hyaline crossband at forking of veins M₁₊₂ and M₃₊₄; M₁₊₂ bent sharply downward before r-m crossvein, m crossvein, with distinct petiole in middle; other wing markings as in Fig. 114 **Walkeraitia, n. gen.**
 Wing not as above 39
- 39 (38). Only 1 superior fronto-orbital bristle and 1 inferior fronto-orbital; wing as in Fig. 85 **Termitorioxia**
 Not as above 40
- 40 (39). Wing predominantly brown (Fig. 99e), or with only 1 hyaline mark in cell R₁ (Fig. 47f); face convex or vertical in profile 41
 Wing with 3 hyaline marks in cell R₁, 1 in apex of R₃, and numerous spots on posterior margin and in middle (Fig. 48); eye oval, face concave in middle ...
 **Lyronotum**
- 41 (40). Superior fronto-orbital bristles widely spaced, lowers situated at or below middle of front; face slightly to strongly convex in profile (Fig. 99b, 100c, 101c); costal spine large, length ca. equal to upcurved section of vein Sc; scutellum densely setose on disc (except in *Themaroides vittata*, n. sp.); wing mostly brown (Fig. 101f) or with large quadrate hyaline mark in cell R₁ (Fig. 100f) **Themaroides**

Superior fronto-orbitals closely placed on upper 1/4 of front, widely spaced from single inferior fronto-orbital; face vertical (Fig. 47a); costal spine only moderately developed, 2-3× larger than costal setae; wing with hyaline triangular mark in cell R₁, usually hyaline spots in cell R₅ (Fig. 47f); scutellum bare on disc, sparsely setose on side; thorax yellow, brown band across hind border of mesonotum . . .

- **Kertesziola** (in part)
- 42 (4). Disc of scutellum densely setose; pteropleural bristles well developed 43
 Disc of scutellum bare, or with only a few setae on margin; if pteropleural bristle present, wings with hyaline marks, not uniformly brown 45
- 43 (40). Costa normal, 1 strong spine at apex of vein Sc 44
 Costa strongly spinose to level of m crossvein (Fig. 16b) **Buloloa**, n. gen.
- 44 (43). Wing entirely dark brown, with not more than posterior area hyaline, or with a longitudinal hyaline streak from base through cell 1st M₂ into cell R₅ beyond r-m crossvein (*Themarohystrix hyalina*, n. sp.); no transverse hyaline marks through cells (Fig. 94b, 97b); M₃₊₄ and straight basal portion of Cu setose above **Themarohystrix**
 Basal portion of wing largely or entirely hyaline (Fig. 107a), or with large hyaline marks in cells 1st and 2nd M₂ (Fig. 106); broad hyaline mark through middle from costa between r-m and m crossveins (Fig. 105d); M₁₊₂ setose above to about m crossvein; M₃₊₄ and Cu bare **Themaroidopsis**
- 45 (42). Vein M₃₊₄ bare; straight basal portion of Cu setose above 46
 Vein M₃₊₄ and base of Cu conspicuously setose above 51
- 46 (45). Wing conspicuously marked with hyaline bands (Fig. 71a) or spots (Fig. 70); pteropleural and intrapostalar bristles strong 47
 Wing uniformly brown (Fig. 17e); pteropleura with only fine setulae; intrapostalars lacking 48
- 47 (46). Mesonotum rufous, a few small black spots on side; wing brownish yellow, small subhyaline spots around margin; veins R₂₊₃ and R₄₊₅ distinctly wavy; mid tibia with 2 strong apical spurs; ocellar bristles strong **Pseudacanthoneura** (in part)
 Mesonotum with black vittae; wing with large hyaline "V" extending from posterior margin nearly to apex (Fig. 71a); veins R₂₊₃ and R₄₊₅ nearly straight; mid tibia with 1 long and 1 short spur; ocellars setalike **Pseudoneothemara**, n. gen.
- 48 (46). Vein R₁ short, not extending beyond level with r-m crossvein (except for short distance beyond in *Nothoclusiosoma*, n. gen.); mesonotum with longitudinal yellow or black vittae; sternopleural bristles strong 49
 Vein R₁ elongate, ending in costa beyond level with m crossvein (Fig. 17e); costal margin arched or convex in ♂; body shining black, yellow-white band each side along upper margin of each pleuron over humerus; sternopleurals rather hair-like, inconspicuous **Cheesmanomyia**
- 49 (48). Mesonotum black, with 3 incomplete yellow vittae (Fig. 109c, 112e); vein R₁ ending before level of r-m crossvein 50
 Mesonotum yellow with 6 black vittae; R₁ ending beyond level of r-m; ♂ front leg *Clusiosoma*-like; ♂ genitalia *Trypanocentra*-like **Nothoclusiosoma**, n. gen.
- 50 (49). Wing uniformly dark brown. Pleura mostly black; median vitta of mesonotum wedge-shaped, extending nearly to prescutellar bristles, lateral vitta extending just beyond suture; ♂ front legs not ornate, ♂ genitalia *Trypanocentra*-like . . .
 **Trypanocentra** (in part, *T. tricuneata*, n. sp.)
 Basal 1/3 of wing subhyaline; pleura mostly yellow; median yellow vitta of mesonotum extending from anterior margin to prescutellars, lateral vittae

- extending from level of hind margins of humeri to hind margin of mesonotum; ♂ front leg and genitalia *Clusiosoma*-like **Hemclusiosoma, n. gen.**
- 51 (45). Wing mostly or entirely dark brown, usually with basal and/or posterior portion hyaline to subhyaline, without hyaline markings from margins or in cells (Fig. 74a); vein R₂₊₃ straight, M₁₊₂ bare beyond m crossvein; head normal in shape; eyes of ♂ not stalked; pteropleura with only fine setulae 52
- Wing with prominent hyaline wedges on anterior and posterior margins (Fig. 86c), or with hyaline marks along both margins (Fig. 90), or longitudinal hyaline streak through cells R₅ and M₂ (Fig. 87); vein R₂₊₃ undulate, M₁₊₂ setose above beyond m crossvein; head broad, ♂ eye stalked (except in *Themara ampla* Walker and *T. nigrifacies* Perkins); pteropleural bristle at least weakly developed **Themara**
- 52 (51). Face gibbose, prominently convex in profile, highest in center, receding to oral margin 53
- Face vertical, or nearly so, or concave in profile 54
- 53 (52). Vertex developed into sharp thin backwardly developed keel; 2 strong black subequal spines at apex of mid tibia; black transverse band in middle of face (except in *Rabaulia invittata*); ♂ front tarsus lacking ventral comb; thorax mostly black **Rabaulia**
- Vertex gently rounded; 1 strong and 1 short apical spine on mid tibia; ♂ front basitarsus with black ventral comb; thorax and face yellow; 2 longitudinal black vittae on mesonotum **Rabauliomorpha**
- 54 (52). Face in profile concave on lower median portion, oral margin protruding; ♂ front femur swollen, densely bristled ventrally (Fig. 25a), or with spinose protuberance below near base (Fig. 31a); ♂ front tibia with posteroapical projection densely white pilose ventrally (Fig. 23a); ♂ surstylus long, slender, 6–8× longer than wide; lobe of 10th sternum rodlike (Fig. 22a) **Clusiosoma**
- Face vertical in profile; ♂ front leg not ornate except basitarsal comb in subgenus *Clusiomorpha*; surstylus short and thick; 10th sternum hidden (Fig. 109b) **Trypanocentra** (in part)

Genus Acanthonevra Macquart

Acanthonevra Macquart, 1843, Mém. Soc. Sci. Agric. Arts, Lille 1842: 377. Type-species: *Acanthonevra fuscipennis* Macquart, 1843, by monotypy.

Acanthonevra, emendation, de Meijere, 1913, Nova Guinea 9: 367.

Rioxoptilona Hendel, 1914, Wien. Entomol. Ztg. 33: 78. Type-species: *Trypeta vaga* Wiedemann, 1830, by original designation.

Rioxaptilona, error.

Chaetomerella de Meijere, 1914, Tijdschr. Entomol. 57: 212. Type-species: *Chaetomerella nigrifacies* de Meijere, 1914, by original designation. **New synonymy.**

See note under *A. nigrifacies* (de Meijere).

Hendel (1927: 56) and Shiraki (1933: 311) treated *Chaetomerella* de Meijere as a synonym of *Phorelliosoma* Hendel. Chen (1948: 87) did not agree with the synonymy and resurrected *Chaetomerella* to generic status, adding *C. varipes* Chen, from Taiwan. I do not know where *C. varipes* should be placed. Chen indicates that it has the arista pubescent, has 6 scutellar bristles with secondaries weak, and lacks presutural, dorso-central, prescutellar, and pteropleural bristles.

The concept of *Acanthonevra* has been greatly confused in the literature. Much of the confusion has probably resulted from Bezzi's (1913: 117) misidentification of the type-species. The specimens from Assam that he described as *A. fuscipennis* obviously were specimens of *Themara maculipennis* (Westwood). His wing figure (op. cit. plate IX, Fig. 29) fits *T. maculipennis* and he indicated that vein M_{3+4} is setose. As I have previously discussed (Hardy 1973: 81, 1974: 65), the curvature of vein R_{2+3} is obviously not of generic importance in this case. *Rioxoptilona* was proposed by Hendel (1914) for those species that have vein R_{2+3} straight instead of undulate. It has been clearly demonstrated that the curvature of the vein is of questionable value, intergrading from those with the vein straight [*A. dunlopi* (Wulp), Fig. 2] to those with the vein strongly curved as in *normaliceps* Enderlein (Fig. 6). The curvature of the vein appears to be of only specific importance and, in the case of *A. scutellopunctata* Hering, seems to be a variable character for the species.

Acanthonevra fits in the group of genera having 1 long spur on the middle tibia; secondary scutellars rather poorly developed; arista long plumose; only veins R_1 and R_{4+5} setose above; intrapostalars lacking; and sternopleural bristles present. It differs from related genera by typically having only 1 pair of inferior fronto-orbital bristles situated on the lower 1/3 of front; the 3rd costal section equal or subequal to the 2nd; the face gently concave in the lower median portion with oral margin slightly produced; small, setalike ocellar bristles; the interfrontal area with numerous short erect setae; the 3rd antennal segment broad, rounded, less than 2× longer than wide and extending approximately 2/3 the length of the face; and the scutellum glossy, bare on disc, rarely with a few setae along sides.

Wing mostly brown with prominent hyaline wedges on anterior and posterior margins and usually 1 or more hyaline spots in cell R_5 (Fig. 2, 3, 5, 8a). Costal spines small, usually ca. equal in size to costal setae, rarely 2× larger than setae. Secondary scutellar bristles small, ca. equal in size to genal and outer vertical bristles. Crossvein r-m situated at ca. apical 2/3 of 1st M_2 ; lobe of Cu approximately 2× longer than transverse basal portion of vein Cu_1 . Usually ♂ legs ornate, front femur with a rather dense, irregular arrangement of bristles on ventral surface, and tibia with a single row of short erect bristles extending entire length (Fig. 8b).

As noted above, most species of this genus have only 1 distinct inferior fronto-orbital bristle, but often 1-3 fine erect hairs will be present in line with the inferior fronto-orbital, these usually pale brown in color. Occasional specimens of *A. scutellopunctata* Hering have a 2nd distinct black inferior fronto-orbital present below the larger bristle and in *A. speciosa* (Hendel) a secondary bristle is apparently consistently present. Specimens with 2 inferior fronto-orbitals will key near the *Neothemara* complex. It should also be noted that mesonotal markings are not always reliable as specific characters, and some wing markings, especially the spotting in cell R_5 , may not always be reliable. These variations may depend somewhat upon the degree of tenacity. The diagnostic importance of the development of pleurotergal bristles is not understood. These bristles are well developed in some species, rudimentary or absent in others.

The biologies of Oriental and Australasian *Acanthonevra* are unknown. We do not know how to collect these flies. They are scarce in collections and too few specimens are available for study. Much remains to be done to gain an understanding of the range of variations in coloration, wing markings, and other features.

Eleven species are presently recognized from Indonesia and New Guinea. The concepts of some of these are still vague.

KEY TO SPECIES OF *ACANTHONEVRA*
FROM INDONESIA (INCLUDING ALL OF BORNEO) AND NEW GUINEA

- 1. Apex of wing hyaline or subhyaline (Fig. 3, 7) 2
 Apex entirely brown 3
- 2. Vein R₂₊₃ strongly undulate; only 1 pair inferior fronto-orbitals; wing as in Fig. 3, typical *Acanthonevra* ... (India; Thailand; Indonesia) **fuscipennis**
 R₂₊₃ straight; 2 pairs inferior fronto-orbitals; wing as Fig. 7; atypical or questionable *Acanthonevra* ... (Sumatra) **notabilis, n. comb.**
- 3 (1). Face, antennae, and palpi yellow, or at most not more than a tinge of brown on 3rd antennal segment 4
 Face and genae black; antennae, palpi, and most of legs dark brown; vein R₂₊₃ strongly undulate; 4th costal section subequal to 5th (Fig. 5); base of wing subhyaline, slightly yellowish to level of forking of veins R and M ... (Java) **nigrifacies, n. comb.**
- 4 (3). Vein R₂₊₃ wavy (Fig. 1b, 12) 5
 Vein R₂₊₃ straight or nearly so (Fig. 2) 9
- 5 (4). Hyaline marks on anterior margin of wing, in cells Sc and R₁, widely separated by broad brown band ca. 2× wider than cell Sc (Fig. 1b, 8a) 6
 Hyaline marks in 2nd costal cell, cells Sc and R₁ narrowly separated by arms of brown that are narrower than cell Sc (Fig. 12) ... (Nusa Tenggara) **sumbawana**
- 6 (5). Hyaline wedge from wing margin in cell R₁ continuous throughout, connecting with hyaline mark in cell 1st M₂ (Fig. 1b); head and thorax rufous, no brown or black markings; face straight, slightly projected on lower margin (Fig. 1a) ... (Sabah) **continua, n. sp.**
 Not as above 7
- 7 (6). Basal medial and basal radial cells (M and R) mostly or entirely brown; hyaline mark at base of 3rd costal section confined to cell Sc; no hyaline wedge from margin through apex of cell 1st M₂ 8
 Base of wing below forkings of veins Rs and M mostly subhyaline; hyaline mark in Sc extending through cell R₁ to vein R₂₊₃; large hyaline wedge from margin through apex of cell 1st M₂ ... (widespr. in Oriental Region) **ochropleura**
- 8 (7). Large hyaline wedge in cell R₁ extending to vein R₄₊₅; small quadrate hyaline spot in base of cell Sc; 1 or more hyaline spots in cell R₅; apex of vein R₂₊₃ not curved upward; ♂ front femur densely bristled ventrally ... (Maluku; Sabah) ... **ceramensis**
 Mark in cell R₁ confined to upper 1/2; mark in cell Sc elongate, filling basal 1/2; no hyaline marks in cell R₅; vein R₂₊₃ strongly curved upward at apex making 4th costal section shorter than 5th (Fig. 6); ♂ front femur not densely bristled ... (Sumatra) **normaliceps**
- 9 (4). Cell Sc entirely dark brown 10
 Sc with hyaline mark in basal portion 11
- 10 (9). Hyaline wedge in cell R₁ ending in upper edge of cell R₃; round hyaline mark in cell R₅ before r-m (Fig. 4b); thorax rufous; 2 well-developed inferior fronto-orbital bristles ... (Irian Jaya) **incerta, n. sp.**
 Mark in R₁ continuous across wing into cell 1st M₂; no hyaline mark in R₅ before r-m (Fig. 10a); mesonotum with dark brown to black vittae, hind margin all black (Fig. 10b) ... (Sabah; Sarawak) **shinonagai, n. sp.**

- 11 (9). Hyaline mark in Sc confined to cell; basal medial cell (M) and most of basal radial cell (R) brown; isolated hyaline mark at apex of 1st M_2 (Fig. 11); usually with complete brown vittae on mesonotum 12
- Hyaline mark in cell Sc extending through cell R_1 to vein R_{2+3} ; cell M and cell R nearly all subhyaline; hyaline wedge from margin through apex of cell 1st M_2 (Fig. 2); pteropleural bristle rudimentary, setalike . . . (widespr. in Oriental Region) **dunlopi**
- 12 (11). Cell R_5 with 1 hyaline spot before r-m crossvein, 2 spots beyond (Fig. 11); pleura mostly yellow, narrow brown vitta along upper margin and 1 through middle of mesopleuron . . . (Taiwan; Java) **speciosa**
- Cell R_5 with 1 hyaline spot beyond r-m, often none before (Fig. 9a); mesopleuron lacking brown vittae . . . (Borneo) **scutellopunctata**

***Acanthonevra ceramensis* de Meijere, new status**

Acanthonevra dunlopi var. *ceramensis* de Meijere, 1913, Bijdr. Dierkd. 19: 61. Type-locality: Ceram, Maluku. Lectotype ♂ in ZMUA, designated herein.

Diagnosis. This taxon has been an enigma. The original description did not give enough diagnostic information to support its placement. I have studied a series of specimens from Sabah that appear to be close to this species, but they show considerable variation in thoracic coloration and markings and in the curvature of vein R_{2+3} . Specimens seem to vary from those that have R_{2+3} rather strongly undulate to those with this vein gently curved or straight. The latter fit the concept of *A. scutellopunctata* Hering and I had first considered the 2 taxa synonyms. Until we have more collections from Maluku and a better understanding of color and wing venation differences in these 2 taxa, I am treating those specimens with R_{2+3} undulate as *A. ceramensis* and those with this vein straight as *A. scutellopunctata*.

The following descriptive notes are based upon the lectotype.

Fits most characteristics of typical *Acanthonevra*, wing markings similar to those of *A. scutellopunctata* but with vein R_{2+3} rather strongly undulate. Mesonotum mostly yellow with 2 complete submedian brown vittae extending posteriorly to level with humeral bristles, 2 short brown vittae behind level with supraalar bristles, these fusing on hind margin of mesonotum. A brown vitta on each side from above humerus to wing base, broadly interrupted at suture. Scutellum mostly brown, yellow at extreme apex, small yellow mark on each side above basal bristles. Scutellum with 4 strong bristles, secondaries rudimentary, hairlike, ca. 1/5 as long as apical bristles. Abdomen mostly black, 1st tergum and posterior margin of 2nd yellow. Faint reddish line extends down middle of 5th tergum. Wing very similar to *A. scutellopunctata*, hyaline at extreme base, basad of forking of major veins. Otherwise dark brown with large hyaline mark through 2nd costal section extending through base of cell R_1 and continuing narrow streak across base of cell R_5 and apex of cell M. Hyaline spot at base of cell Sc quadrate, confined to cell. Hyaline spot in cell R_1 large, extending through most of cell R_3 almost to vein R_{4+5} . Prominent, oblong, hyaline spot in cell R_5 ca. opposite m crossvein. Hyaline wedge from margin in cell 2nd M_2 and isolated transverse mark at apex of cell 1st M_2 , also large hyaline spot from margin at apex of anal cell through cell M_4 to vein R_{4+5} . Front femur of ♂ densely bristled ventrally as most *Acanthonevra*.

Lengths: body and wing each 5.75–6.0 mm.

Distribution. Maluku (Ceram), Sabah.

Specimens examined. 4♂ cotypes: I have designated a ♂ lectotype from Ceram. 20 specimens with following data. MALAYSIA: SABAH: forest camp, 19 km N of Kalabakan, 30.X-18.XI.1962 (J.C. Kuncheria & Y. Hirashima); Sandakan Residency, Gomantong Caves, 20 mi [32 km] S of Sandakan, 22-26.XI.1958 (T.C. Maa); Tawau, Quoin Hill, Cocoa Res. Stn., 8.IX.1962 (Hirashima).

Acanthonevra continua Hardy, new species

Fig. 1

Diagnosis. By having a hyaline band extending across the middle of the wing, this species resembles *A. soluta* (Bezzi), from Burma and Thailand, and *A. shinonagai*, n. sp., from Sabah. It is readily recognized by an entirely yellow to rufous thorax; a lack of dark brown to black markings on mesonotum, pleura, and metanotum; the undulate, not straight, vein R_{2+3} ; the flat face in profile except for slightly protruded lower margin (not with a distinct concavity in median portion); the shorter 3rd antennal segment, which extends less than $1/2$ length of face (Fig. 1a) rather than ca. $2/3$ length of face; and by differences in wing markings, as shown in Fig. 1b and 10a. Also see Bezzi (1913: plate IX, Fig. 26).

♀ *Head.* Nearly $1\frac{1}{2}$ × higher than long; compound eyes ca. $1/3$ higher than long, slightly tapered on lower portion. Front equal in width to eye, entirely yellow with golden sheen. Lower superior fronto-orbital bristles at median portion of front (type with aberrant extra bristle slightly behind and about halfway to orbital margin from upper superior fronto-orbitals, extra bristle not present on other specimens). Inferior fronto-orbital strong, longer than superior fronto-orbital, situated at ca. lower $1/4$ of front. Front with scattered erect black setae. Ocellar bristles small, ca. equal in size to setae behind upper vertical bristles. Postvertical bristles rather strong, equal in size to superior fronto-orbitals. Face with antennal grooves rather shallow and straight down median portion, protruded on lower margin, slight indentation at lower $2/3$. Third antennal segment ca. $1/2$ longer than wide (Fig. 1a). Palpi entirely short black setose. *Thorax.* Yellow to rufous, densely short black setose on mesonotum, scattered dark brown setae on sides of scutellum. Dorsocentral bristles ca. halfway between anterior supraalar and postalar. Secondary scutellars small, rather setalike, only 2 or 3× larger than setae on sides of scutellum. Pteropleural bristle well developed, equal in size to lower mesopleural bristle. *Legs.* Yellow. Spine at apex of mid tibia ca. $1/3$ as long as basitarsus. *Wing.* As in Fig. 1b, basal portion below

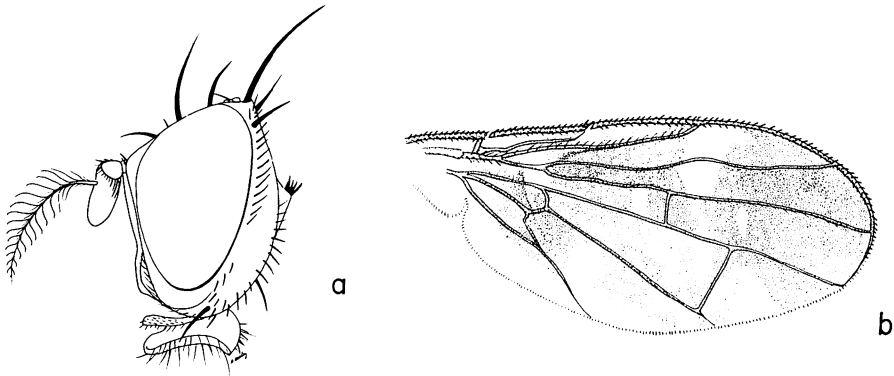


FIG. 1. *Acanthonevra continua*: a, head; b, wing.

forkings of Rs and M subhyaline, yellowish to slightly brown tinged through cells R and M. Spot in 3rd costal section confined to Sc. Hyaline mark from costa in cell R₁ extends across wing into upper 1/2 of cell 1st M₂. Cell R₅ with hyaline spot before r-m crossvein, another spot opposite m crossvein. *Abdomen*. Terga 1 and 2 yellow except for a tinge of brown across median portion of 2. Other terga brown, tinged with rufous, except for narrow yellow apical margins. Basal segment of ovipositor mostly yellow, brown on apex, rather short, slightly longer than terga 5+6 as seen in situ.

Lengths: body 8.0 mm; wing 8.75 mm.

♂. Unknown.

Holotype ♀, MALAYSIA: SABAH: forest camp, 19 km N of Kalabakan, 30.X.1962, in primary forest (Y. Hirashima) (BPBM 13,331). 2♀ paratypes, same loc. as holotype, 19.X-6.XI.1962 (K.J. Kuncheria) (1 BPBM and 1 UH).

Etymology. The name is from the Latin *continuus* and refers to the nearly complete crossband in the middle of the wing.

Acanthonevra dunlopi (Wulp)

Fig. 2

Ptilona dunlopi Wulp, 1880, Tijdschr. Entomol. 5: 186. Type-locality: Padang, Sumatra. The type ♀ is supposed to be in the ZMUA but cannot be found; apparently it is lost.

Diagnosis. This species fits in a complex of species that have the male front femora densely bristled ventrally and the thorax predominantly or entirely rufous. It closely resembles *A. ochropleura* Hering but differs by having vein R₂₊₃ straight, not undulate; the mesonotum lacking indications of brownish vittae; and the abdomen mostly shining black, tinged with yellow in the middle of hind margins of terga 2-4.

Head and appendages yellow, fitting characteristics of typical *Acanthonevra*. Thorax yellow to rufous, lacking distinct dark markings except for brown on sides of metanotum, brownish spot on each side of scutellum, pale brown vitta from humerus to wing base, and faint streak of brown on upper edges of pro- and mesopleura. Specimens have been seen by me with thorax all pale; these may be teneral or coloration may be variable. Pleurotergal bristles absent or scarcely discernible from surrounding setae. Front femora of ♂ densely bristled ventrally, each front tibia

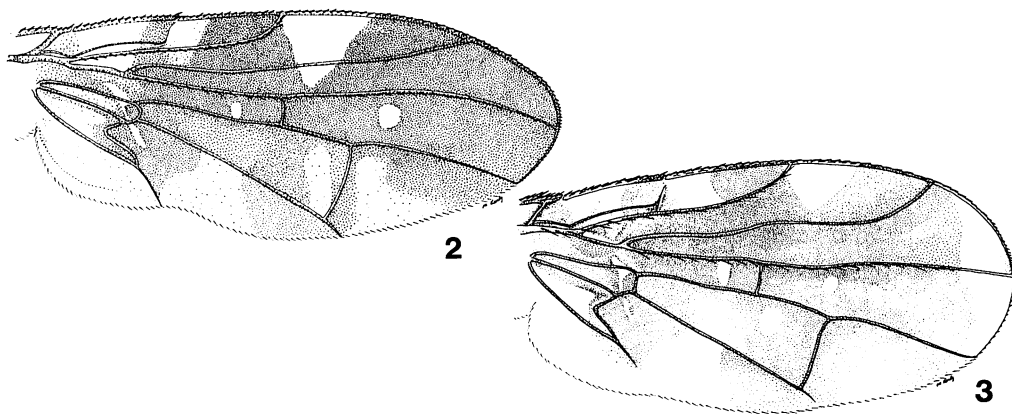


FIG. 2-3. 2, *Acanthonevra dunlopi*, wing. 3, *Acanthonevra fuscipennis*, wing.

with complete row of closely placed bristly setae. Wing mostly brown, 3 large hyaline wedges on anterior margin: 1 filling much of 2nd costal section, extending to base of radial sector; 1 filling basal 1/2 of cell Sc, extending to vein R₂₊₃; and 1 in cell R₁ just beyond vein R₁, extending 2/3 distance through cell R₃. Cell R₅ with 2 round hyaline spots, 1 before and 1 after r-m crossvein (possibly a variable character). Posterior portion of wing with large hyaline wedge through cell 2nd M₂, another through apex of 1st M₂, and large hyaline mark in middle of cell M₄ (Fig. 2).

Lengths: body 6.5–7.0 mm; wing 6.2–6.5 mm.

Distribution. Apparently widespread throughout the Oriental Region: Bangladesh, Borneo, Burma, India, Indonesia (Java, Sumatra), and Thailand.

Specimens examined. Ca. 30 specimens from throughout range, but I have not seen specimens from Indonesia. De Meijere (1915: 82) also recorded *A. dunlopi* from Sumatra, and Hering (1952b: 282) recorded it from Java and Mentawai I, Sumatra.

Remarks. The records of “dunlopi” by de Meijere (1904: 110) from Java and Edwards (1919: 50) from Malaysia that have vein R₂₊₃ wavy are probably specimens of *A. ochropleura*. The status of this species is still conjecturable. Too few specimens have been available for study, and the range of variation is not understood. Material from Sumatra will have to be seen to clarify its status.

Acanthonevra fuscipennis Macquart

Fig. 3

Acanthonevra fuscipennis Macquart, 1843, Mém. Soc. Sci. Agric. Arts, Lille 1842: 378. Type-locality: Bengal, India. Type ♀ in MNHP.

Trypeta (Acanthonevra) polyxena Osten Sacken, 1881, Ann. Mus. Civ. Stor. Nat. Genova 16: 462. Type-locality: Java. Type ♀ in MSNG.

Acanthonevra batava Enderlein, 1911, Zool. Jahrb. Abt. Syst. Geogr. Biol. Tiere 31: 417. Type-locality: Sumatra. Type ♀ in PIZ.

Acanthonevra synopica Hering, 1952, Treubia 21: 278. Type-locality: S Sumatra. Type ♂ in RNHL. **New synonymy.**

Diagnosis. *Acanthonevra fuscipennis* fits in the species complex with *A. siamensis* Hardy, from Thailand, by having the apex of the wing mostly or entirely subhyaline, tinged yellowish, and sharply contrasting with the dark brown coloration. It differs from *siamensis* by having the 2nd costal cell divided into 2 hyaline spots; the apex of wing entirely subhyaline, filling most of apices of cells R₃ and R₅; also by having abdomen polished black usually with narrow yellow vitta extending full length down middle.

Head and appendages yellow, fitting characteristic features of genus. Thorax yellow, brown on metanotum and on sides of pleuroterga and hind portions of metapleura, faint indications of brownish discoloration in lines extending down mesonotum but not distinct vittae. Wing (Fig. 3), with vein R₂₊₃ strongly undulate, 4th costal section ca. equal in length to 5th. Hyaline mark in cell Sc confined to cell, extending ca. 1/2 its length. Wedge in cell R₁ usually extending ca. 2/3 width of cell, not reaching vein R₂₊₃. Usually 2 small round hyaline spots in cell R₅, 1 before and 1 after r-m crossvein; basal spot missing in some specimens. Posterior portion of wing with isolated hyaline spot in cell 1st M₂. Front legs of ♂ not modified, lacking densely placed bristles on venter of femora and tibiae. Abdomen mostly polished black, yellow on terga 1–3 but 3 with brown on sides, with yellow vitta down middle of terga 4–5 in ♂ and 4–6 in ♀. Coloring apparently variable, some specimens may have only interrupted streak down dorsum, some have only yellow through tergum 3, and 2 specimens have been seen with terga 4–5 entirely black.

Basal segment of ♀ ovipositor dark reddish brown to black, ca. equal in length to terga 4+5. For details of ♂ genitalia and ♀ ovipositor refer to Hardy (1973: 88, Fig. 36a-e).

Lengths: body 5.25-7.0 mm; wing 5.5-8.5 mm.

Distribution. Widespread in SE Asia: India, Thailand, Indonesia (Sumatra, Java).

Specimens examined. Type ♀ of *bataca* Enderlein; type ♂ and 3♀ paratypes of *synoptica* Hering. Ca. 50 specimens from various localities within range.

Remarks. Much of the confusion in the literature concerning this species dates from Bezzi (1913: 117). He described what he thought to be *A. fuscipennis* Macquart, but obviously the species that he had was a *Themara*, very probably *T. maculipennis* (Westwood). Reexamination of the types of *A. fuscipennis*, *A. polyxena*, *A. bataca*, and *A. synoptica* clarified the status of this species and confirmed the above synonymy.

Acanthonevra incerta Hardy, new species

Fig. 4

Diagnosis. This species fits very close to *A. unicolor* (Shiraki). It fits Shiraki's (1933) description in all details except that cell Sc is entirely dark brown, rather than with a hyaline mark at base, and the thorax is entirely rufous, with no brown markings. Shiraki (1933) said *A. unicolor* "very rarely with three very indistinct and fine brown stripes in the middle, along the interior margin of humeral calli there is a very fine brown streak." It keys closest to *A. shinonagai*, n. sp., but differs by having the hyaline wedge in cell R₁ ending in the upper edge of cell R₃ and having a round hyaline mark in cell R₅ before the r-m crossvein (Fig. 4b).

♀. *Head.* As in Fig. 4d. Front sloping; antennae at ca. middle of head. Interfrontal area with numerous erect dark setae and several erect hairs in line with inferior fronto-orbital bristles. Ocellar bristles moderately developed, ca. 2/3 as long as postocellars. Face only gently raised in middle portion, antennal grooves comparatively shallow. Head and appendages yellow to rufous, tinge of brown on 3rd antennal segment and sides of clypeus. Arista comparatively short plumose, longest rays on dorsal margin ca. 1/2 width of 3rd antennal segment. *Thorax.* Pale rufous, with full complement of bristles except lacking intrapostalars. Secondary scutellars ca. 2/5 as long as apical bristles, dorsocentrals halfway between supraalars and postalars. Scutellum bare. *Legs.* Yellow; only apical spine of mid tibia black, apical spinules small, yellow, inconspicuous. Mid tibia with 2 brownish yellow posterodorsal bristles at middle. Hind tibia with row of ca. 6 yellow anterodorsal bristles at middle, 3-4 anteroventrals beyond middle. *Wing.* Large hyaline wedge in middle of anterior margin, 2 round hyaline spots in cell R₃, 3 hyaline spots on posterior margin (Fig. 4b). Third costal section ca. 3/4 as long as 2nd. Crossvein r-m at apical 2/3 of cell 1st M₂, lobe of cell Cu ca. 1/3 as long as cell Cu_{1+1stA}. *Abdomen.* Terga 3-7 mostly or entirely shining black, yellow on extreme basomedian margin of 3rd, small spot of yellow on apicomedial margin of 3rd. Terga 1-2 yellow, brown to black on sides. Basal segment of ovipositor ca. 2× longer than wide, ca. equal in length to terga 4-6. Piercer of ovipositor blunt at apex, 2 prominent preapical setae on each side (Fig. 4a). Three oval spermathecae with short bulbous necks, short curved projections from apices (Fig. 4c).

Lengths: body 4.7 mm; wing 5.5 mm.

♂. Unknown.

Holotype ♀ (BPBM 13,332), 3♀ paratypes, IRIAN JAYA: Star Mts, Sibil Val, 1245 m, 18.X.1961 & 8.XI.1961 (S. & L. Quate) (1 paratype BPBM, 2 UH).

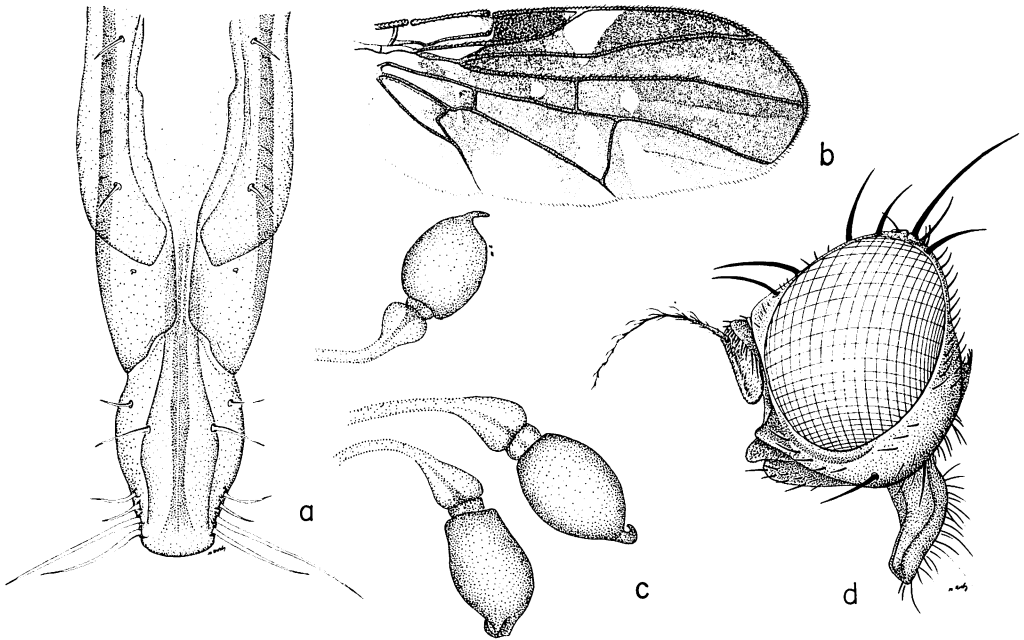


FIG. 4. *Acanthonevra incerta*: a, apex of ♀ ovipositor; b, wing; c, ♀ spermathecae; d, head.

Etymology. The name is from the Latin *incertus*, “doubtful, unsettled,” or “uncertain”; it alludes to the questionable placement of this taxon.

Remarks. This species is closely related to *Diarrhagma unicolor* Shiraki (1933: 303). The 2 form a complex of species whose placement is borderline but that seem to best fit as aberrant *Acanthonevra*. In his description of *unicolor* from Taiwan, Shiraki was doubtful about placing it in *Diarrhagma*, indicating it probably represented a new genus fitting between *Diarrhagma* and *Acanthonevra*. The new species described below, from Irian Jaya, appears congeneric with *unicolor*. The only character that might be in question is that of the intrapostalar bristles; Shiraki made no mention of them and indicated that the chaetotaxy was the same as for *Diarrhagma*. It is doubtful that he had studied specimens of *Diarrhagma modestum* (Fabricius), which has intrapostalar bristles and belongs in a completely different group of genera; *Acanthonevra unicolor* and *Diarrhagma modestum* are not related.

Both *A. incerta* and *A. unicolor* fit in the group of genera that have 2 pairs of inferior fronto-orbitals, apex of wing brown, and only 1 strong spur at the apex of the middle tibia. Because in both the face is concave in profile, intrapostalar bristles are lacking, the 3rd costal section is almost as long as the 2nd, and the wing venation and markings as in Fig. 4b, I am treating these 2 species as an aberrant complex of *Acanthonevra* species with 2 pairs of inferior fronto-orbital bristles.

Acanthonevra nigrifacies de Meijere, new combination

Fig. 5

Chaetomerella nigrifacies de Meijere, 1914, Tijdschr. Entomol. 57: 212. Type-locality: Mt Gede, Java. Type ♂ in ZMUA.

Acanthonevra lieftincki Hering, 1952, Treubia 21: 281. Type-locality: Mt Gede, Tjibodas, Java. Type ♂ in RNHL. New synonymy.

Diagnosis. This species belongs in the group that has vein R_{2+3} strongly curved but differs from all known Oriental and Pacific *Acanthonevra* by having a black face and dark brown to blackish antennae and palpi. Hering (1952b) related this species to *A. melanostoma* Hering, from Manchuria and Japan, and differentiated it by the brown to black antennae and palpi, strongly undulate vein R_{2+3} , differences in wing markings, and other details.

Thorax with anterior portion and sides of mesonotum mostly rufous, gradually darkened in color posteriorly, with 3 indistinct, blackish, longitudinal vittae extending full length, a post-sutural vitta on each side. Scutellum dark brown to black on dorsum, not paler at apex but with extreme lateral margins and venter rufous, tinged with brown. Pleura mostly dark reddish brown to blackish, rufous on posterior 2/5 and on propleura. Wing (Fig. 5) with 4th costal section shorter than 5th, base of wing subhyaline, not marked with brown in basal medial and basal radial cells. Legs mostly brown to blackish, tibiae and tarsi yellow. Front femur of ♂ densely bristled ventrally. Abdomen shining black except yellow 1st tergum and yellow front margin of 2nd tergum.

Length: body and wing each 6.5–8.0 mm.

Distribution. Java.

Specimens examined. Holotypes of both taxa; also 2♂ paratypes of *lieftincki* in RNHL and NHMB.

Remarks. I feel certain that *A. lieftincki* should be synonymized with *Chaetomerella nigrifacies* de Meijere (1914). From my photographs and notes of the types of both taxa the only differences between the 2 I find are that the holotype of *C. nigrifacies* has the arista pubescent, prescutellar and presutural bristles lacking, and vein R_{2+3} not so strongly undulate. The type specimen of *nigrifacies* may have had the rays of the arista and some of the mesonotal bristles rubbed off and may be aberrant in the course of R_{2+3} . Both species were described from specimens from Mt Gede, Java. Further specimens need to be examined to substantiate this synonymy.

Acanthonevra normaliceps Enderlein

Fig. 6

Acanthonevra normaliceps Enderlein, 1911, Zool. Jahrb. Abt. Syst Geogr. Biol. Tiere. 31: 420. Type-locality: Soekaranda, Sumatra. Type ♂ in PIZ.

Diagnosis. This species fits in the group of species that have vein R_{2+3} strongly curved and the front femur of the male not densely bristled ventrally. By the latter character it would seem to fit near *A. fuscipennis*, but the wing markings are completely different. It keys near *A. ochropleura* Hering but differs by having the median portion of wing entirely brown; by lacking hyaline spots in cells R_5 and 1st M_2 , and by wing markings, shown in Fig. 6 and 8a; by having R_{2+3} strongly curved, with 4th costal section subequal in length to 5th; and by the inornate male front leg.

Head yellow to rufous, fitting characteristics of typical *Acanthonevra*. Arista moderately long plumose. Thorax almost entirely rufous, faint indication of 2 pale brown longitudinal vittae. Metanotum dark brown except for pale median line. Legs entirely yellow. Wing largely brown, including basal portion. With 2 hyaline spots in 2nd costal section, large spot at base of cell Sc, another in R₁ just beyond apex of vein R₁, latter occupies almost anterior 1/2 of cell. Hyaline wedge in middle of cell 2nd M₂, another large quadrate spot in cell M₄, cubital and anal portion of wing largely hyaline. Basal segments of abdomen yellow, remainder dark brown to black, indication of rufous median vitta.

Lengths: body 5.5 mm; wing 6.0-7.5 mm

Distribution. Sumatra.

Specimens examined. Holotype. Known only from this specimen.

***Acanthonevra notabilis* (Wulp), new combination**

Fig. 7

Ptilona notabilis Wulp, 1880, Tijdschr. Entomol. 23: 187. Type-locality: Padang, Sumatra. Lectotype ♀ in ZMUA, designated by Hardy (1969).

Diagnosis. This species was placed in *Rioxa* by Enderlein (1911: 448) and Bezzi (1913: 76). I disagree with this placement; the short vein R₁ and 3rd costal section of wing preclude its placement in *Rioxa*. I am unable to place it in any taxon known to me and it seems to best fit as an aberrant *Acanthonevra* with 2 pairs of inferior fronto-orbital bristles. By having the apex of cell R₅ hyaline it keys near *A. fuscipennis*, but the 2 species are not related. It differs from *fuscipennis* by having vein R₂₊₃ straight, 2 pairs of inferior fronto-orbital bristles, dark brown to black vittae on the thorax, and distinctive wing markings (Fig. 7).

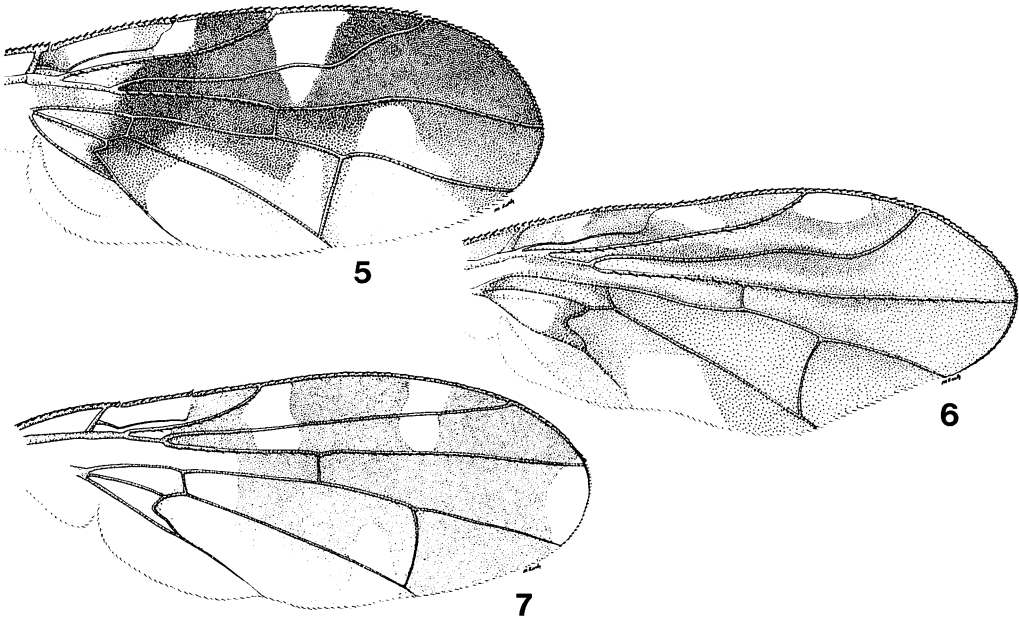


FIG. 5-7. 5, *Acanthonevra nigrifacies*, wing. 6, *Acanthonevra normaliceps*, wing. 7, *Acanthonevra notabilis*, wing.

Front with 2 pairs each of well-spaced inferior and superior fronto-orbital bristles. Face gently concave in middle (as seen in profile), slightly projected above oral margin. Predominantly yellow species with 2 submedian, longitudinal, dark brown to black vittae on mesonotum, oblong dark brown mark above humerus. Abdominal terga 1+2 yellow, tinged brown on side; terga 3-4 yellow medially, dark brown to black on side; terga 5-6 mostly or entirely black. Ovipositor base shining black, equal in length to remainder of abdomen. Wing hyaline or subhyaline basad of forking of vein R_s and on basal portions of cells 1st M_2 and M_4 . Cell Sc brown. Two quadrate hyaline spots from anterior margin through cells R_1 and R_3 to vein R_{4+5} . Cell R_5 with hyaline spot filling apex. Large hyaline mark from margin in cell M_4 extends halfway across apex of 1st M_2 . Third costal section short, scarcely over 1/2 second section. Veins R_{2+3} , R_{4+5} , and M_{1+2} straight. Crossvein r-m near middle of cell 1st M_2 , lobe of cell Cu short, less than 1/4 as long as Cu_{1+1stA} (Fig. 7).

Lengths: body and wing each 7.0 mm.

Distribution. Sumatra.

Specimens examined. Lectotype ♀.

Acanthonevra ochroleura Hering

Fig. 8

Acanthonevra ochroleura Hering, 1951, *Siruna Seva* 7: 4. Type-locality: "Burma"? Type ♂ and 1 ♂ paratype in BMNH, 1 ♂ in NHMB, all labeled "Java."

Diagnosis. This species fits in a complex of species that have vein R_{2+3} undulate and front femur of male densely bristled ventrally. Hering (op. cit.) placed it very close to *A. gravelyi* Munro, from India, separating it by the densely bristled front femur of the male; in *gravelyi* the front femur is inornate.

A predominantly yellow to rufous species. Head characters as in other *Acanthonevra*. In some specimens with faint indications of 5 short, longitudinal vittae on mesonotum (obviously a variable character and not of diagnostic importance). Usually with pale brown streak along upper margin of each mesopleuron, metanotum reddish brown on side, yellow medially. Scutellum rufous on disc, pale yellow on margin and venter, disc almost bare, a few scattered pale setae on margin. Pteropleural bristles rather well developed. Four strong scutellars and 2 rather weak secondary bristles, latter scarcely over 1/3 to 1/2 as long as other bristles. Front leg of ♂ typical of

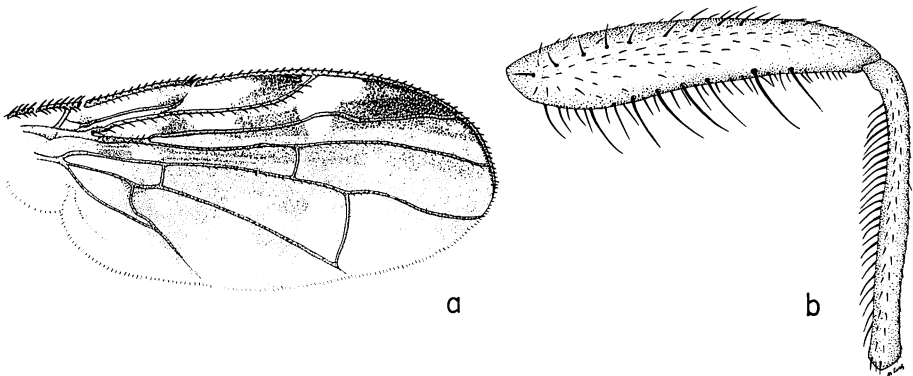


FIG. 8. *Acanthonevra ochroleura*: a, wing; b, ♂ front femur and tibia.

complex (Fig. 8b), other leg characters typical for genus. Wing largely brown, base hyaline to about level of Rs. Hyaline wedge in Sc extending through cell R₁ to vein R₂₊₃, wedge in cell R₁ extending across most of cell R₃. Usually with 1 rather large hyaline spot in cell R₅ beyond m crossvein, some specimens with 2nd hyaline spot before r-m crossvein (this character is variable). Two large hyaline wedges extending from margin through cell M₂, 1 before and 1 after m crossvein. Vein R₂₊₃ gently but distinctly undulate (Fig. 8a). Abdomen with 1st tergum yellow, 2nd yellow apically, side with black band along anterior margin. Terga 3 and 4 broadly black on side and anterior margin, yellow medially and along posterior margin, yellow coloration sometimes extending to anterior margin, interrupting black crossbands. Fifth tergum shining black, usually an indication of yellow down midline. Fifth and 6th terga of ♀ polished black. For characteristics of ♀ abdomen and ♂ genitalia refer to Hardy (1973: 92, Fig. 38a-c). Basal segment of ovipositor short, ca. equal in length to terga 4+5. Apex of piercer blunt, each spermatheca with small, nipplelike bump at apex. Male cercus small, with 2 prominent pairs of setae on margin. Lengths: body 7.5-8.0 mm; wing 7.5-8.5 mm.

Distribution. Borneo (Kalimantan, Sabah, Sarawak), Indonesia (Java, Sumatra), Laos, Thailand, and Burma. Hering (1952b: 282) records it from several localities in Java and from the Mentawai Islands, W of Sumatra.

Specimens examined. Type specimens noted above. Ca. 40 ♂, ♀ specimens with data as follows. BURMA: Mt Victoria, Chinhills, 400 m, III.1938 (G. Heinrich). MALAYSIA: SABAH: Ranau, 8 mi [5 km] N of Paring Hot Springs, 500 m, 8-11.X.1958 (T.C. Maa); SARAWAK: Sadon, Kampong Tapuh, 300-450 m, 10.VII.1958 (Maa). INDONESIA: JAVA: Poespoe, 3000 ft [914 m], 23.XII.1907 (Terry); Djampang Mts, IX.1938 (G. Bengbrenge); SUMATRA: Berastagi, 1400 m, 21-22.XI.1973 (H. Kurahashi).

Acanthonevra scutellopunctata Hering

Fig. 9

Acanthonevra scutellopunctata Hering, 1952, *Treubia* 21: 279. Type-locality: Balikpapan, Borneo [Kalimantan]. Type ♀ in RNHL.

Diagnosis. *Acanthonevra scutellopunctata* seems to fit near *A. speciosa* (Hendel), from Taiwan and recorded from Java; I am not certain that diagnostic characters are present to separate the 2 taxa. *Acanthonevra scutellopunctata* differs by lacking 2 hyaline spots in cell R₅ beyond the r-m crossvein and lacking brown vittae on mesonotum.

The most reliable characters for separating this taxon are the wing markings (Fig. 9a): small quadrate hyaline mark present at base of 3rd costal section, confined to cell Sc; hyaline wedge from costal margin just beyond apex of vein R₁, through cells R₁ and R₃ to vein R₄₊₅; 1 round hyaline spot in cell R₅ beyond r-m crossvein (often small spot before crossvein); hyaline wedge from costa through middle of cell 2nd M₂, isolated hyaline spot at apex of cell 1st M₂; large hyaline wedge from costal margin through middle of cells M₄ and M₂; basal median and basal radial cells mostly or entirely brown, this coloration extending to wing margin at base of 2nd costal section. Abdomen mostly shining black, yellow on 1st tergum, on basomedial portion and narrow apex of 2nd, often with narrow yellow apex on 3rd. Ovipositor base yellow, tinged with brown, ca. equal in length to terga 5+6. Piercer ca. equal in length to 8th segment, blunt at apex (Fig. 9b). Male genitalia as in Fig. 9c, cercus with pair of prominent apical bristlelike setae. Lengths: body 6.0-6.5 mm; wing 6.25-7.0 mm.

Distribution. Borneo (Kalimantan, Sabah, Sarawak).

Specimens examined. Type ♀. Following from MALAYSIA. SABAH: 3♀, Tenompok, 30 mi [48 km] E of Jesselton, 1460 m, 26-31.I.1959 (T.C. Maa); 2♀, 1♂, forest camp, N of Kalabakan, 4.XI.1962 (Y. Hirashima,

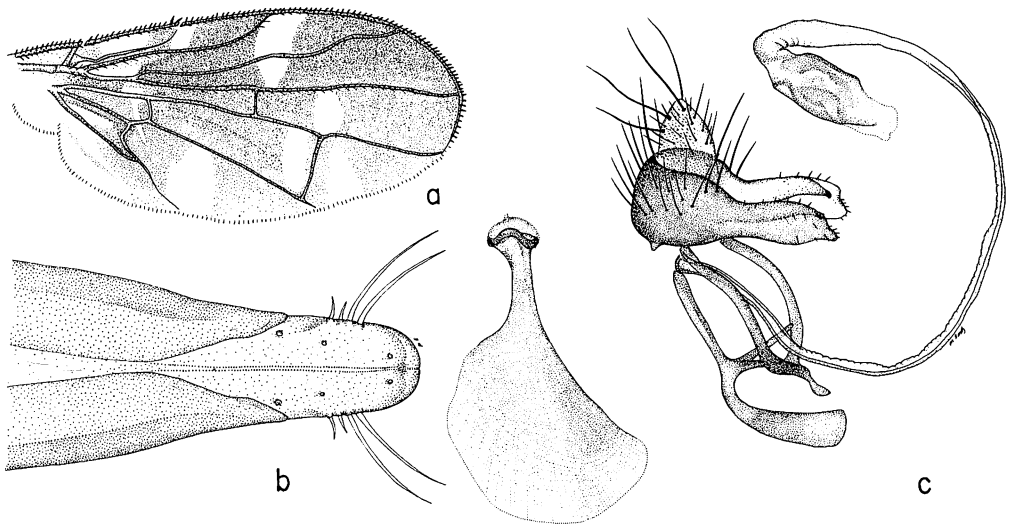


FIG. 9. *Acanthonevra scutellopunctata*: a, wing; b, apex of ♀ piercer; c, ♂ genitalia.

K.J. Kuncheria); 1♂, Singkor, 19.I.1959 (Maa); 1♂, Ranau, 500 m, 8-18.X.1958 (L.W. Quate). SARAWAK: 1♂, Sadong Kampong, Tapuh, 300-450 m, 10.VII.1958 (Maa); Kapit Distr, Merirai Val, 30-300 m, 1-6.VIII.1958 (Maa).

Remarks. The concept of this species is still not clearly understood. It is probable that it may eventually prove to be a synonym of *A. ceramensis* de Meijere. Previously it was known only from the type female and 1 female paratype from E Kalimantan. A series of 35-40 specimens on hand from Sabah show considerable variation in development of brown vittae on the mesonotum and in the curvature of vein R_{2+3} . The type and paratype have R_{2+3} straight, 5 dark vittae on the mesonotum, pteropleura bristles absent, and no hyaline spot in cell R_5 before the r-m crossvein. As noted in the discussion under *A. ceramensis*, until further information is available I am treating those specimens that have vein R_{2+3} straight as *A. scutellopunctata* and those with this vein undulate as *A. ceramensis*. Some specimens lack pteropleural bristles, others have rudimentary bristles, and in most specimens a bristle is distinctly developed but small. The diagnostic importance of the presence or absence of pteropleural bristles in this case is not understood. Most specimens have rather faint brownish vittae down the mesonotum; in some these are distinctly brown and the side of the scutellum is brown; the series examined shows variation from this condition to one in which the thorax is almost entirely rufous, faintly tinged with brown, and no indication of longitudinal vittae. Some specimens have a small hyaline spot in cell R_5 before the r-m crossvein; in others it is lacking. The development of inferior fronto-orbital bristles is also variable in this species; the type has 1 prominent hair on each side below the 1 well-developed bristle that is distinctly larger than the orbital hairs and represents a rudimentary secondary bristle. In the series at hand specimens usually have only 1 inferior bristle; in some erect pale brown hairs are present in line with the bristle; in a few other specimens a rather well-developed, black secondary bristle is present, this sometimes 2/3 as long as regular bristles.

Acanthonevra shinonagai Hardy, new species

Fig. 10

Diagnosis. This species differs from all known *Acanthonevra* by having the 3rd costal section (cell Sc) entirely dark brown, lacking a hyaline basal marking. The front legs of the male are inornate, otherwise it would fall in the group of species that have vein R_{2+3} straight. It resembles *A. soluta* from Burma and Thailand, by having the hyaline spot in cell R_1 continuing into cell 1st M_2 (Fig. 10a), and it differs from it by the wing, thoracic, and abdominal markings. It keys near *A. incerta*, but the 2 are not related. Refer to discussion under that species.

♀. *Head.* Fits characteristic features of genus but with rudimentary black 2nd inferior fronto-orbital bristle below, ca. 1/2 length of main bristle. Brown bristlelike hair above, in line with inferior fronto-orbitals. Ocellar bristles better developed than most *Acanthonevra*, still setalike, ca. equal in size to occipital setae. Head and appendages pale yellow; ocellar triangle black; rather broad, dark brown to blackish band on side of upper occiput from outer vertical bristles to cervix. Moderately large dark brown bristle on side of lower occiput, 3/4 as long as genal bristle. *Thorax.* Predominantly pale yellow. Anterior margin of mesonotum (in line with scapular bristles) brown, 2 complete brown submedian vittae, 2 narrow postsutural vittae (in line with inner postalar bristles), submedian vittae on hind margin of mesonotum (Fig. 10b). Narrow brown vitta on side of mesonotum from outer scapular bristle along top margin of humerus along notopleuron to level of supraalar bristle. Metanotum and hind portion of metapleuron dark reddish brown to black. Median portion of notopleuron yellow, dorsal and ventral margins brown. Brown longitudinal vitta from lower margin of humerus along top margin of mesopleuron. Pteropleural bristles rudimentary, pale brown, scarcely differentiated from pale hairs on pleuron. Pteropleuron with 1 pale brown seta, other setae pale yellow. *Legs.* Pale yellow, segments slender. Front femur with row of small posterodorsal bristles along full length, 6 moderately developed black posteroventral bristles. Spur at apex of mid tibia ca. 2/5 as long as basitarsus. *Wing.* Mostly dark brown; basal portion, basad of forking of Rs and M, mostly subhyaline, tinged yellowish, faint tinge of brown in basal radial and basal medial cells. Large hyaline wedge in cell R_1 , at apex of vein R_1 , extending across cell R_3 , continuous through R_5 just beyond r-m crossvein, slightly diffused in this portion, connecting with hyaline spot in apical portion of cell 1st M_2 . Large round hyaline spot in R_5 at level with m crossvein, narrow hyaline wedge from margin through middle part of cell 2nd M_2 (Fig. 10a). *Abdomen.* Base yellow with broad yellow band down dorsum from posterior border of 2nd tergum to apex of 5th; otherwise abdomen polished black. Basal segment of ovipositor black, tinged with red apically, slender, only slightly tapered, comparatively elongate, ca. equal in length to terga 3-6. Piercer blunt at apex.

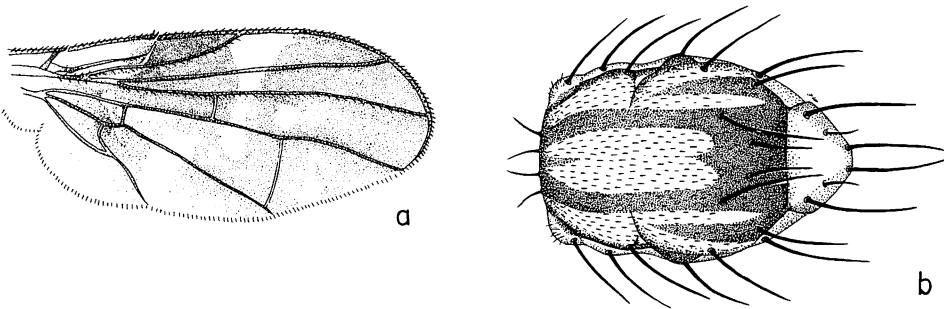


FIG. 10. *Acanthonevra shinonagai*: a, wing; b, thorax, dorsal view.

Lengths: body, without ovipositor 5.5 mm; wing 5.65 mm.

♂. Fits description of ♀ except markings not as distinct, lateral vittae on mesonotum end just before notopleural callus, pleura entirely yellow. Secondary inferior fronto-orbital bristles yellow, faintly tinged with brown. In 1 paratype hyaline wedge from costal margin interrupted in upper portion of cell R_5 , not continuous with hyaline spots at apex of cell 1st M_2 . *Abdomen*. Polished blue-black, yellow on 1st tergum and broad lateral margin of 2nd. Genitalia and sternum rufous.

Lengths: body and wing each 4.5 mm.

Holotype ♀, MALAYSIA: SABAH: Papar, 50 km SW of Kota Kinabalu, 13-15.XI.1975 (S. Shinonaga) (BPBM 13,333). Allotype ♂, SABAH: forest camp, 19 km N of Kalabakan, 4.XI.1962 (K.J. Kuncheria). Paratypes: 1♂, SABAH: Ranau, W Coast Residency, 8 mi [5 km] N of Paring Hot Springs, 500 m, 8-11.X.1958 (L.W. Quate & T.C. Maa); 1♀, SARAWAK: Sadong, Kampong Papuh, 300-460 m, 10.VII.1958 (Maa). Paratypes in UH.

Etymology. This species is named after Dr S. Shinonaga, Tokyo Medical and Dental University, Japan.

Acanthonevra speciosa (Hendel)

Fig. 11

Rioxoptilona speciosa Hendel, 1915, Ann. Hist. Nat. Mus. Hung. 13: 445. Type-locality: Hoozan, Taiwan. Type ♂ in DEI.

Diagnosis. This species fits near *A. scutellopunctata* by having vein R_{2+3} straight, the front femur of the male densely bristled ventrally, yellow head and appendages, hyaline mark in 3rd costal section confined to cell Sc, hyaline wedge in R_1 extending to vein R_{4+5} , and mostly brown basal medial and basal radial cells. It differs from *scutellopunctata* by having 2 prominent hyaline spots in cell R_5 beyond the r-m crossvein and by having 2 narrow longitudinal brown vittae extending across each pleuron.

The following descriptive notes are based upon specimens from Java; they seem to fit all characteristics of the type from Taiwan, and also of specimens that have been recorded from Japan, except that the vittae on the mesonotum are paler brown and less distinct.

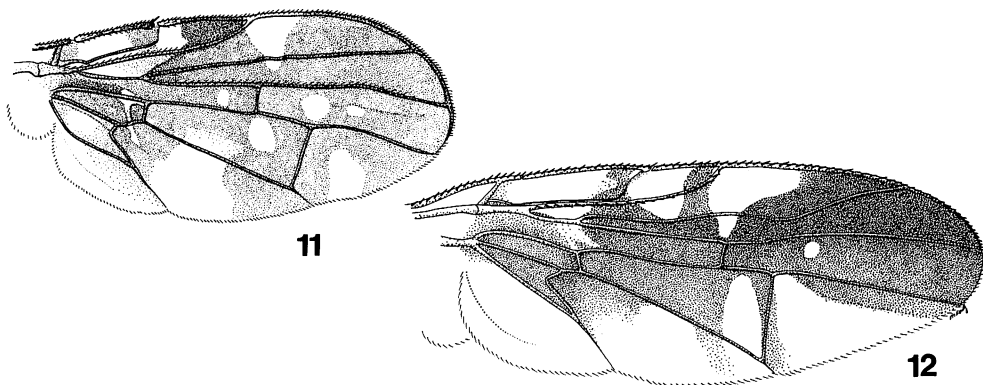


FIG. 11-12. 11, *Acanthonevra speciosa*, wing. 12, *Acanthonevra sumbawana*, wing.

Head and appendages yellow to rufous, tinge of brown above oral margin, on side of lower face, and along genae. Brown line extending transversely across upper 2/3 of occiput. Two well-developed inferior fronto-orbital bristles (aberrant from most *Acanthonevra* in this respect). Thorax mostly rufous, pair of submedian vittae extending from suture to hind margins and onto sides of scutellum. Brown vitta extending longitudinally along sides of mesonotum from outer scapulars, above humerus in line with presutural bristles, to wing base. Side of thorax with narrow brown vitta from lower margin of humerus along upper edge of mesopleuron, another brown incomplete vitta from propleuron to middle of mesopleuron, interrupted on anterior 1/3 of mesopleuron. Propleuron with numerous black setae, several bristlelike. Pteropleural bristles rather well developed. Secondary scutellars well developed, ca. 2/3 as long as apical bristles. Front femur of ♂ with abundance of black bristlelike setae on posteroventral and ventral surfaces. Front tibia also with numerous short black bristlelike setae on ventral surface. Hind tibia with row of short anterodorsal and 4 anteroventral bristles at middle. Legs otherwise fitting those of other *Acanthonevra*. Wing (Fig. 11) as noted above. Abdomen mostly shining dark reddish brown to black, yellow on apical margins of terga 2-4 in ♂, 2-5 in ♀, median portions of terga 1-4 in ♂ (1-5 in ♀) broadly rufous, tinged with brown. Base of ovipositor ca. equal in length to terga 4-6.

Lengths: body and wing each 6.0-6.7 mm.

Distribution. Taiwan, Japan, Java.

Specimens examined. 1♀, JAVA: SE, Mt Semeru, Darungan Riv, 800 m, 6-13.VI.1941 (M.A. Liefstinck) [determined and recorded by Hering (1952b: 282)]; 1♀, Peopoe, IV.1914 (F. Muir).

Acanthonevra sumbawana Hering

Fig. 12

Acanthonevra sumbawana Hering, 1941, Arb. Morphol. Taxon. Entomol. Berlin-Dahlem 8: 31. Type-locality: Batoe Doelang, Sumbawa, Nusa Tenggara. Type ♀ in DEI.

Diagnosis. This species fits provisionally in the group of species that have vein R_{2+3} gently, but distinctly undulate. Hering said it fits close to *A. gravellyi* Munro, from India. Only known from the female, which shows just as close a relationship to *A. ochropleura* Hering from Java and Sumatra. Until the male is associated and it is known whether or not the front femora are densely bristled ventrally, it is not possible to place this with certainty in a species complex. *Acanthonevra sumbawana* is differentiated by the hyaline marks along the anterior margin of wings that are narrowly separated by slender arms of brown extending to costa through apices of the 2nd costal section and cell Sc, and by the narrow band of brown to the costa over m crossvein (Fig. 12).

Head and appendages yellow. Thorax and legs yellow to rufous, no apparent vittae or dark markings except for brown on metanotum. One strong spur at apex of middle tibia. Secondary scutellar bristles weak, ca. 1/2 as long as apical scutellars. Pteropleural bristle not very strong. Wing (Fig. 12) as noted above. Cell Sc slightly shorter than usual for *Acanthonevra*, being ca. 3/4 of cell 1st M_2 . Second costal cell hyaline except at apex. Three hyaline wedges occupy most of median portion of anterior margin of wing and bisect cell R_1 , 1 hyaline wedge at apex of vein R_1 extends through most of cell R_3 nearly to vein R_{4+5} . Apical portion of wing dark brown, cell R_5 brown, 1 small round hyaline mark beyond level with m crossvein. Posterior margin of wing with hyaline wedges from margin through cell M_2 immediately before and after m crossvein (Fig. 12). Abdomen dark brown to black, mostly yellow on basal 3 terga. Basal segment of ovipositor black, slender, ca. equal in length to terga 4-6.

Lengths: body and wing each 6.8 mm.

Distribution. Indonesia (Nusa Tenggara).

Specimens examined. Holotype ♀.

***Alincocallistomyia* Hardy, new genus**

Type of genus: *Alincocallistomyia imitator*, n. sp.

This genus closely resembles *Callistomyia* Bezzi because it has similar distinctive wing markings (Fig. 13b); a row of black ventral spinules on the mid and hind femora; ocellar bristles setalike; face concave in profile; arista short plumose; 3 pairs of strong inferior fronto-orbital bristles on the lower 2/3 of front, 2 pairs of superior fronto-orbitals on the upper 1/4; and dorsocentral bristles posterior in position, slightly in front of a line drawn between the prescutellars and postalars. It differs from *Callistomyia* and fits in the Acanthonevrina subtribe by having 6 strong scutellar bristles, rather than only 4; by lacking propleural bristles, rather than having a prominent bristle on each propleuron; by having prescutellar bristles present; and crossvein r-m situated beyond the middle of cell 1st M₂, rather than distinctly before middle. It keys near *Sophira* (*Parasophira*) *biangulata* (de Meijere), which is aberrant from other *Sophira*, by having secondary scutellar bristles. *Alincocallistomyia* has 3 pairs of strong inferior fronto-orbital bristles on the lower 2/3 of face; arista short plumose; posteroventral and anteroventral spinules on the mid and hind femora; wing with a large brown mark filling all of the subapical portion, not with a hyaline mark filling most of cell 2nd M₂; and the thorax all rufous except for 1 median black vitta on the mesonotum, rather than with 3 black longitudinal vittae on the mesonotum.

Head shaped as in Fig. 13a, front sloping, face concave, oral margin projecting. Third antennal segment about 3× longer than wide, 2/3 length of face. Supracervical sclerite and hind portion of occiput pale-haired. Thorax with usual complement of bristles (strong pteropleurals, 6 strong scutellars), lacking intrapostalars. Propleura densely covered with fine yellow hair. Disc of scutellum with fine, inconspicuous, yellow setae. Front femur with row of moderate black posteroventral bristles along 2/3 length of segment, and 2 irregular rows of short, black, dorsal, bristlelike setae. Two strong spurs at apex of mid tibia, anterior spur ca. 2/3 as long as posterior. Mid femur with row each of posteroventral and anteroventral spinules at apical 1/3 of segment, hind femur with anteroventral and posteroventral spinules on apical 1/2 of segment, also ca. 8 erect black bristlelike dorsal setae at apical 1/3. Hind tibia with complete row of black anterodorsal setae, mid tibia with ca. 6 posterodorsal setae beyond middle of segment. Wing (Fig. 13b) as noted above. Costal spines lacking. Third costal section ca. 2/3 as long as 2nd. Vein R₁ ends slightly before level with crossvein r-m. Vein R₂₊₃ straight, veins R₄₊₅ and M₁₊₂ only gently convex on apical sections. Lobe of cell Cu only slightly over 1/3 as long as vein Cu_{1+1stA}.

Etymology. The generic epithet is a combination of the Greek *alinkios*, "resembling" or "like," and *Callistomyia*. It refers to the remarkable resemblance of this new genus with the genus *Callistomyia*.

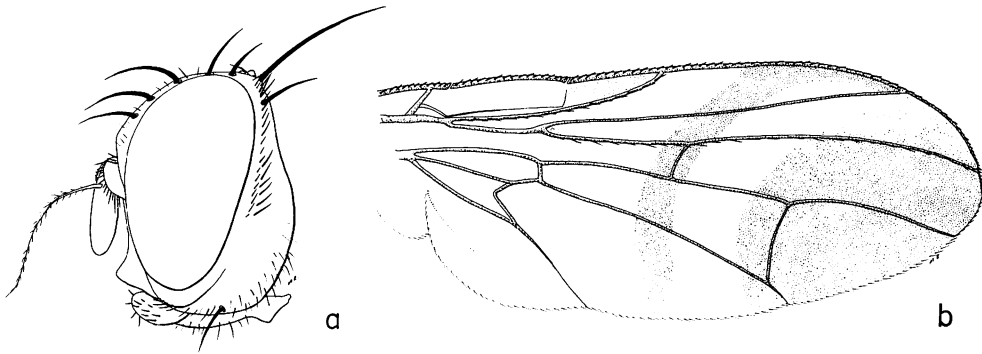


FIG. 13. *Alincocallistomyia imitator*: a, head; b, wing.

Alincocallistomyia imitator Hardy, new species

Fig. 13

Diagnosis. This species is readily differentiated from all other genera in the *Acanthonevrina* by the *Callistomyia*-like wing markings (Fig. 13b) and by the characters noted above.

♀. **Head.** Yellow, ocellar triangle black, faint tinge of brown on lower median portion of front. Shape and bristling (Fig. 13a) as for genus. **Thorax.** Rufous, black longitudinal vitta from front margin between inner scapular bristles almost to hind margin of mesonotum; metanotum mostly shining black, ground color tinged with red. **Legs.** Yellow, hind tibiae brown, tinge of brown on outer surfaces of middle tibiae. Otherwise as noted above. **Wing.** (Fig. 13b) as for genus. **Abdomen.** Predominantly yellow to rufous, black band across hind margins of terga 3–6, sides of terga narrowly shining black. Visible portion of 6th tergum slightly more than 1/2 as long as 5th. Ovipositor rufous, basal segment ca. equal in length to terga 5+6. Piercer not mounted on slide for study; apex extruded in specimen at hand, sharply pointed and slender.

Lengths: body, excluding ovipositor, and wing each 7.7 mm.

♂. Unknown.

Holotype ♀, MALAYSIA: SABAH: Tawau Residency, Kalabakan Riv, 30 mi [48 km] W of Tawau, 9–18.XI.1958 (T.C. Maa) (BPBM 13,334).

Etymology. The specific epithet is from the Latin *imitatus*, “copy” or “mimic,” and refers to the resemblance of this species with those of *Callistomyia*.

Alloeomyia Hardy, new genus

Type of genus: *Alloeomyia flavida*, n. sp.

This genus fits in the group of genera that have only 1 strong spur at the apex of the mid tibia; 2 pairs of inferior fronto-orbital bristles; a full complement of head and body bristles except pteropleurals; only veins R_1 and R_{4+5} setose above; and the costal spine strong, its length ca. equal to the upcurved portion of vein Sc. It fits in the complex of genera that have veins R_{4+5} and M_{1+2} straight or nearly so, the face concave in middle as seen in profile, intrapostalar bristles well developed; and dorsocentrals ca. in line with supraalars. It keys near *Paraphasca*, n. gen., and somewhat resembles that genus in

body coloration and general facies. It differs from *Paraphasca* by having the pteropleural bristles poorly developed, scarcely differentiated from pteropleural setae; a few setae on each side of the scutellum, the scutellum with 6 strong bristles, secondaries subequal to apical pair; the 3rd costal section ca. $\frac{3}{4}$ as long as 2nd; the genal bristle black; the face more deeply concave in middle (Fig. 14b); the last section of veins R_{4+5} and M_{1+2} only gently convex; and wing markings completely different (compare Fig. 14a and 59b). Other diagnostic features as given under the species description below.

Etymology. The generic epithet is a combination of the Greek words *allos*, "of another kind, different," and *myio*, "fly"; the name alludes to the distinctiveness of the genus from other taxa.

Alloeomyia flavida Hardy, new species

Fig. 14

Diagnosis. This species can be differentiated from all other known Acanthonevrini by its almost all yellow body and appendages, concave face (Fig. 14b), and wing markings (Fig. 14a).

♀. *Head.* Pale yellow, compound eyes and ocellar triangle dark. Front gently sloping. Inferior fronto-orbital bristles approximate near lower margin of front, superior fronto-orbitals well spaced on upper $\frac{1}{2}$. Ocellar bristles setalike, much smaller than bristles of occipital row. Face very gently raised in middle on upper portion below antennae, lower portion prominently protruded above oral margin. Antenna as in Fig. 14b, extended ca. $\frac{2}{3}$ length of front, near upper $\frac{1}{4}$ of head. *Thorax.* Pale yellow, small black spot above wing base (hidden when wing held upright). Bristling as noted for genus, dorsocentrals ca. in line with supraalars. Propleuron with pale yellowish setae. *Legs.* Yellow. Front femur with row of moderately strong posteroventral bristles extending almost full length, with 2 irregular rows of shorter, black posterodorsal bristles. Outer spine at apex of bristles at middle tibia short, scarcely larger than other apical spinules. Mid tibia with 4-5 posterodorsal bristles at middle. Hind tibia with about 5 anterodorsal bristles at middle and 1 anteroventral at apical $\frac{2}{3}$. *Wing.* As noted for genus. Crossvein r-m near apical $\frac{2}{3}$ of cell 1st M_2 , lobe of cell Cu ca. $\frac{1}{3}$ as long as vein Cu_{1+1stA} . Base of wing, below level of forking of veins R_{4+5} and R_{2+3} , mostly hyaline. Anteroapical portion dark brown, large hyaline wedge in cell R_1 , 3 hyaline spots in cell R_5 . Posterior portion mostly hyaline, with streaks of hypopleuron. Dorsocentral bristles near halfway point between supraalars and postalars. Second-

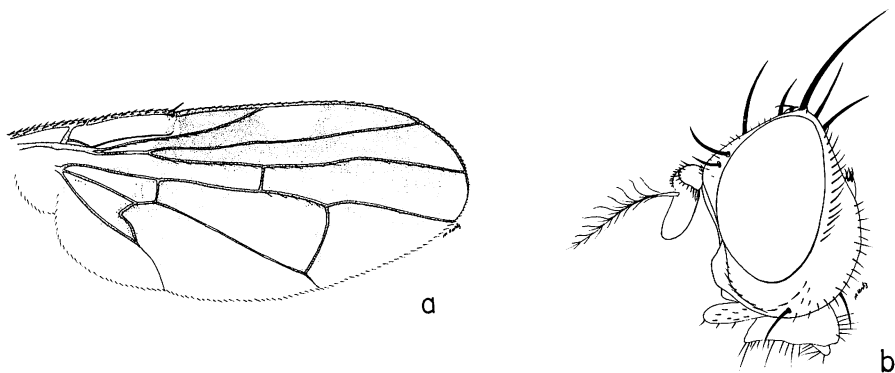


FIG. 14. *Alloeomyia flavida*: a, wing; b, head.

brown from margin as in Fig. 14a. *Abdomen*. Yellow, faint tinges of brown at bases of terga. Basal segment of ovipositor pale yellow, brown on apical portion, broad, not much longer than wide, ca. equal in length to terga 3–6. Ovipositor not extruded for study, piercer blunt at apex with 2 pairs of prominent preapical setae.

Lengths: body, excluding ovipositor, 6.75 mm; wing 8.5 mm.

♂. As ♀ except for genital characters. Genitalia not dissected.

Lengths: body 6.0 mm; wing 7.0 mm.

Holotype ♀ (BPBM 13,335), 1♂ paratype (UH), PAPUA NEW GUINEA: upper Gumi, nr Bulolo, 2010 m, 31.VIII.1979, on human feces (H. Roberts). Allotype ♂ (AMS), 1♂ paratype (FRSB), same locality and collector as holotype, 13.I.1980, in fly trap baited with human feces.

Remarks. This is the only record I have seen of fruit flies attracted to animal feces.

Etymology. The name comes from the Latin *flavidus*, “yellowish,” and refers to the all-yellow body.

Anchiacanthonevra Hardy, new genus

Type of genus: *Anchiacanthonevra maculipennis*, n. sp.

This genus fits *Acanthonevra* except that the face is straight in profile, very slightly projected above oral margin; the 3rd costal section is comparatively short, ca. 2/3 as long as 2nd; crossvein r-m at or slightly before the middle of cell 1st M₂; the costal spine strong, nearly equal in length to the upturned portion of vein Sc; the wing has numerous hyaline spots (Fig. 15a); the propleuron has a row of moderately strong black bristles on the anterior margin; the 3rd antennal segment is short, ca. as long as wide, reaching only ca. 1/3 length of front (Fig. 15b); and the hind tibiae lack anterovenral bristles at middle.

Etymology. The generic epithet combines the Greek *anchi*, “near,” with *Acanthonevra*.

Anchiacanthonevra maculipennis Hardy, new species

Fig. 15

Diagnosis. This species differs from any known taxa by the characters given for the genus.

♀. *Head* (Fig. 15b) with characters as noted for genus. Ocellar bristles setalike, postocellars strong, almost equal in size to inner vertical bristles. Mostly rufous, pair of confluent dark brown to black marks in middle of front, transverse black band across middle of occiput, black spot on side of lower occiput and upper gena, 2 black marks on lower margin of face, incomplete narrow black line across upper 2/5 of face, and small black mark laterally on eye orbit opposite base of antenna. Middle of face flattened on lower 1/2, raised into sharp keel on upper portion between antennal bases. Interfrontal area sparse short erect pale setose. Basal 2 segments of antenna black, 2nd with fringe of long yellow hairs around venter; 3rd segment yellow, not much longer than wide. Palpi yellow basally, apical halves brown to blackish, tinged with yellow. *Thorax*. Yellow, 4 longitudinal black vittae on mesonotum, submedian pair complete, extending onto sides of scutellum, lateral pair interrupted at suture, continued again above wing bases. Narrow streak of black on side from behind suture almost to inner postalar bristle. Intrapostalars lacking. Pleura with short strip of black across upper margin of each propleuron, black vitta from lower propleuron continuous across middle of meso-, ptero-, and metapleura. Irregular black markings on upper anterior and posteromedian portions of sternopleuron, small dark brown to black spot on hypopleuron. Dorsocentral bristles near halfway point between supraalars and postalars. Second-

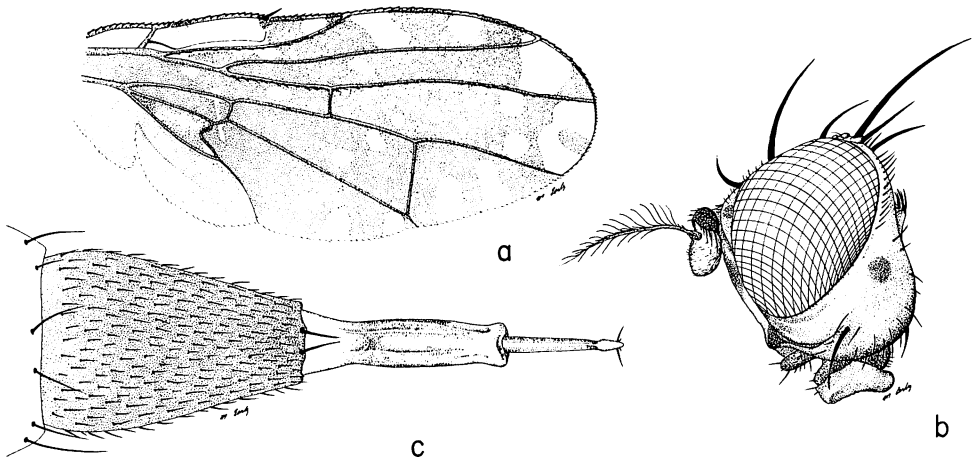


FIG. 15. *Anchiacanthonevra maculipennis*: a, wing; b, head; c, ♀ ovipositor.

dary scutellars ca. $2/3$ as long as apical bristles. Pteropleural bristles strong, equal in size to sterno- and mesopleurals. Four moderately strong bristles along front margin of each propleuron. *Legs*. Yellow, tinge of brown on ventral portions of mid and hind femora at apical $1/3-1/4$. Spur of mid tibia ca. $2/5$ as long as basitarsus. Front femur with complete row of moderately long posteroventral bristles. Mid tibiae with 6 short pale brownish yellow posterodorsal bristles at middle, no anteroventral bristles. *Wing* (Fig. 15a). As noted for genus. Predominantly dark brown, hyaline spots around margin, 6-7 round hyaline spots in middle. Vein R_{2+3} straight. Lobe of cell Cu ca. $1/3$ as long as vein Cu_{1+1stA} . *Abdomen*. Broadly black on sides of terga 3-5, yellow down median portions from base to apical $2/5$ of 5th tergum; black submedian mark down terga 1-2, 6th tergum entirely black. Basal segment of ovipositor yellow to rufous, tinged with brown to blackish medially, ca. $2\times$ longer than wide ca. equal in length to terga 4-6. Piercer long, slender, rounded at apex, 2 prominent yellow preapical setae on side (Fig. 15c).

Lengths: body, excluding ovipositor, 6.4 mm; wing 6.0 mm.

♂. Unknown.

Holotype ♀, PNG: BISMARCK ARCH.: NEW BRITAIN: Riv Kapiura, 18.XII.1979, herb layer, lowland rain forest (H. Roberts) (BPBM 13,336).

Etymology. The name combines the Latin words *macula*, "spot," and *pennis*, "wing," and refers to the spotted wings.

Buloloa Hardy, new genus

Type of genus: *Buloloa spinicosta*, n. sp.

This genus fits in a complex of genera with *Themaroidopsis* Hering because it has the scutellum densely setose with 6 strong bristles; 2 incurved inferior fronto-orbital bristles approximate near the lower margin of front (Fig. 16a); small, setalike ocellar bristles; 2 strong spurs at apex of the mid tibiae; strong intrapostalar bristles and 2 pairs of supraalars; the face vertical, slightly receding above the oral margin, and the antenna comparatively small, 3rd segment ca. $2\times$ longer than wide, ca. $1/3$ length of the

face. The thorax is vittate. It can be readily differentiated by the strongly spinose costal margin (Fig. 16b) and unusually strong occipital bristles, ca. equal in size to upper superior fronto-orbitals; it differs also by having vein Cu_1 and M_{3+4} setose above and vein M_{1+2} with only a few, ca. 5, small setae near the r-m crossvein; by having the superior fronto-orbital bristles rather close together near the middle of front, and the lower at $3/5-2/3$ of front; and by having the costal cell dark brown. The spinose costa is somewhat similar to that of *Enoplopteron* de Meijere, but the 2 genera are not related.

Etymology. The generic epithet is from the place name "Bulolo."

***Buloloa spinicosta* Hardy, new species**

Fig. 16

Diagnosis. This species can be readily distinguished from all known Acanthonevrini by the characters given for genus.

♂. *Head.* For genus and as in Fig. 16a; shaped as in *Themaroidopsis* Hering. Postocellar bristles moderately developed, much smaller than strong occipital bristles. Head yellow except for ocellar triangle and narrow streak of black down middle of front from vertex almost to level with inferior fronto-orbital bristles. Third antennal segment brown to blackish along dorsal margin and at apex. Arista very long plumose, longest rays subequal in length to 3rd segment. Front rounded in upper median portion, not flattened above as in *Themaroidopsis*. Vertex with slight indication of keel along upper margin. *Thorax.* Pale yellow except for following black vittae; 1 down middle of mesonotum from ca. level with scapular bristles almost to level with intrapostalars; 2 submedian vittae, each extending from level of humeral bristles to along side of scutellum just beyond bases of secondary scutellar bristles; 1 on side of mesonotum from front margin just above humerus along notopleuron to wing base; 1 on side extending across mesopleuron from anterior thoracic spiracle almost to posterior margin at level with lower of 2 mesopleural bristles; short streak of black along anterodorsal margin of sternopleuron, narrow streak along lower margin of pteropleuron. Mesonotum, scutellum, meso- and sternopleura densely black setose. Propleuron with row of black bristlelike setae on anterior margin. Postscutellum and metanotum pale yellow. Mesosternum black. Dorsocentral bristles at level of 2nd pair of supraalars. Two pteropleural bristles. *Legs.* Similar to those of other related genera. Mid and

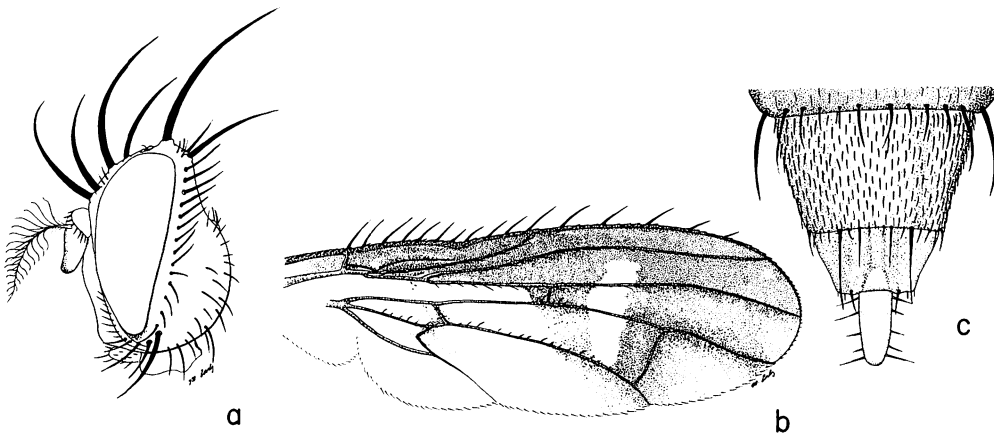


FIG. 16. *Buloloa spinicosta*: a, head; b, wing; c, ♀ ovipositor.

hind femora each with row of anterodorsal bristles at middle. *Wing*. Costal bristles at end of vein Sc not differentiated from strong spines along costa (Fig. 16b). Wing mostly dark brown, almost black, hyaline mark across middle in area between r-m, m crossvein from upper 2/3 of cell R_5 almost to vein M_{3+4} , posterobasal portion of wing subhyaline to just basad of r-m crossvein. Third costal section ca. 2/3 as long as 2nd. Veins R_{2+3} , R_{4+5} , and M_{1+2} straight or nearly so. Crossvein r-m just slightly beyond middle of cell 1st M_2 . Lobe of cell Cu short, shorter than vertical portion of vein Cu, ca. 1/5 length of vein Cu_{1+1stA} . *Abdomen*. Basal 2 terga pale yellow, anterior margin of tergum 1 black. Terga 3 and 4 mostly subshining black, broadly yellow along posterior margins, 5th tergum entirely subshining black. Genitalia not studied.

Lengths: body and wing each 8.8 mm.

♀. As in ♂ except apical margin of terga 3 and 4 very narrowly yellow in ground color, densely gray pollinose. Tergum 6 ca. 1/2 as long as 5 as seen in situ. Basal segment of ovipositor black, seen in situ ca. length of 5th tergum. Piercer of ovipositor gently rounded at apex, with 5 or 6 erect preapical hairs on side (Fig. 16c).

Lengths: body, excluding ovipositor, 9.0 mm; wing 8.25 mm.

Holotype ♂ (BPBM 13,337) and allotype ♀ (BPBM), PAPUA NEW GUINEA: Bulolo, Manki logging area, 4.III.1983, on stem of *Bambusa* (H. Roberts).

Etymology. The specific epithet combines the Latin *spina*, "spine," with *costa*, and refers to the spinose costa.

Genus *Cheesmanomyia* Malloch

Cheesmanomyia Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 419. Type-species. *Cheesmanomyia unica* Malloch [= new synonym of *C. nigra* de Meijere, 1906].

This genus fits in the group of genera characterized by almost uniformly brown wings lacking hyaline markings; scutellum that is bare on the disc; a few setae above near m-cu crossvein; and M_{3+4} bare or with only a few setae near its base. It fits in the *Clusiosoma* complex of genera by lacking pteropleural bristles and having intrapostalar bristles, and by having the male surstyli and lobes of the 10th sternum long and slender (Fig. 17b). It is readily differentiated from other dark-winged Acanthonevrini by the elongate vein R_1 that ends in the costa well beyond the level with the m crossvein (Fig. 17e) and by the dorsocentral bristles that are well behind the anterior supraalars. For further details refer to the characteristics of *C. nigra*, the only known species, below.

Cheesmanomyia nigra (de Meijere)

Fig. 17

Rioxa nigra de Meijere, 1906, Nova Guinea 5: 95. Type-locality: Lake Sentani, Irian Jaya. Type ♂ in ZMUA. *Cheesmanomyia unica* Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 420. Type-locality: "Jutefa Bay Pim," Irian Jaya. Type ♀ in BMNH. *New synonymy*.

Diagnosis. The wing marking characters used by Malloch (1939), based upon female specimens, are not valid. I find considerable variation in the coloration of the costal cell (from mostly brown to yellowish or subhyaline) and the intensity of the infuscation of the basal and posterior portions of the wing. I first thought that *C. nigra* and *C. unica* could be differentiated by the amount of convexity of the anterior margin of the male wing, by the presence or absence of setae at the base of vein M_{3+4} , and by the body size. In the series of specimens examined, many from the same collections, the convex-

ity of the anterior margin varies from rather strongly arched (Fig. 17e) to gently convex; the body size varies considerably and considerable variation is seen in the setation of the basal portion of vein M_{3+4} , from 0-4 small scattered setae.

A predominantly black or dark reddish-brown species with humeri and broad line along upper edge of mesopleuron to wing base ivory to pale yellow; yellow also on side and venter of scutellum, posterolateral corners of mesonotum, and on halteres; extreme apices of femora and most of tibiae and tarsi yellow; hind tibia tinged with brown on basal 1/2. Head (Fig. 17a) with 2 pairs each of evenly spaced inferior and superior fronto-orbitals. Ocellar bristles setalike. Face raised along median portion, gently convex in lateral view. Antennal grooves prominent, slightly gray pollinose, extending 1/2 length of face. Face, except for lateral margins, dark reddish brown to black in ♂, yellow in ♀, with conspicuous rather long black hairs in vibrissal row along lower

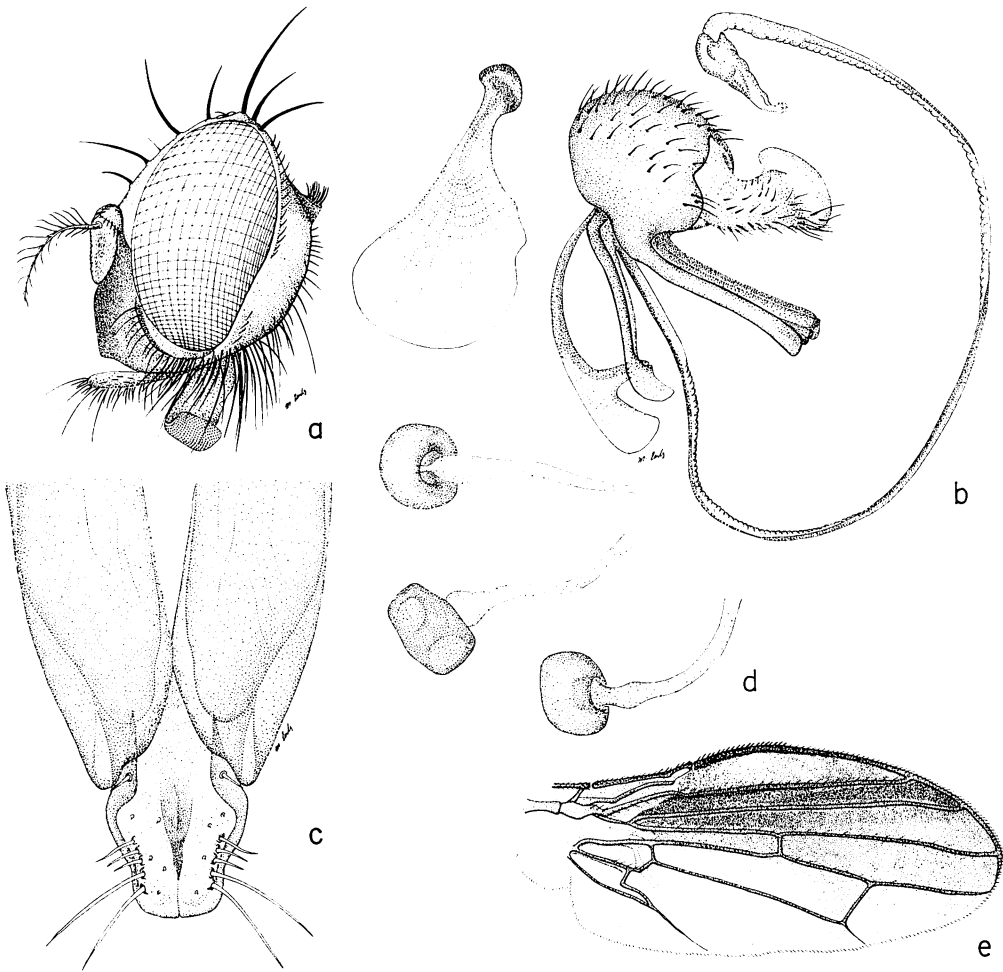


FIG. 17. *Cheesmanomyia nigra*: a, head; b, ♂ genitalia; c, apex of ♀ ovipositor; d, ♀ spermathecae; e, ♂ wing.

genal margin and lower portion of occiput; these hairs longer and denser, almost villose, in ♂. Ventral surface of palpus densely haired in both sexes. Thorax rather elongate, mesonotum 1/2 longer than wide. With usual complement of bristles except lacking pteropleurals; sternopleurals rather hairlike. Dorsocentral bristles ca. halfway between supraalar and postalar bristles. Scutellum with 6 strong bristles, intermediate pair nearly subequal to basal pair. Wing (Fig. 17e) as noted above. In ♂, 3rd costal section, between apices of veins R_1 and R_{2+3} , usually 4–5× longer than 4th section, between apices of veins R_{2+3} and R_{4+5} but in some specimens 3rd section scarcely 3× longer than 4th. In ♀, costal margin straight or nearly so, 3rd costal section ca. 2½–3× longer than 4th. Posteroventral surface of ♂ front femur several rows of long, densely placed bristles, outer rows strongest. Ventral surface of femur bare or nearly so, anteroventral surface with several rows of shorter bristlelike hairs. Stronger bristles of posteroventral surface greater in length than width of femur. Mid tibia with 1 strong black apical spine plus several short black spines. Male genitalia *Clusiosoma*-like, with surstyli and lobes of 10th sternum long, slender (Fig. 17b). Basal segment of ♀ ovipositor rather long, almost equal in length to remainder of abdomen. Piercer ca. 1/2 as long as membranous (8th) segment, blunt at apex, 2 strong and 3 short preapical setae on side (Fig. 17c). Three small round spermathecae present (Fig. 17d).

Lengths: body 6.8–8.75 mm; wing 4.5–8.5 mm.

Distribution. Widespread throughout island of New Guinea.

Specimens examined. Types of *C. nigra* and *C. unica*. Ca. 100 specimens with following data. IRIAN JAYA: Kota Nica, nr Hollandia, 24.XII.1961 (S. & L. Quate); Cyclops Mts, Ifar, 300 m, 24.XI.1958 (J.L. Gressitt); Hollandia Binnen, 100 m, 2.XI.1958, on ginger (Gressitt); Hamadi, nr Hollandia, 50 m, 13.VII.1957 (D.E. Hardy); Cyclops Mts, Sabron Camp, 2000 ft [610 m], VI.1936 (L.E. Cheesman). PAPUA NEW GUINEA: Morobe Prov, Wau, 1200 m, 2.XI.1969 (M. Sedlacek); Eastern Highlands, Aiyura, 1800 m, 7.I.1964 (Gressitt); Finisterre Range, Saidor, Aiyawa Vill, 16–23.VI.1959 (W.W. Brandt); Kiunga, Fly Riv, 21–24.X.1957 (Brandt); Eliptamin Val, 1200–1350 m, 1–15.VII.1959 (Brandt); Kuminibus, nr Maprik, 17.XII.1963 (D.K. McAlpine); Imbia, nr Maprik, 18.XII.1963 (McAlpine); Maprik, 27.II.1964 (D.H. Colless); upper Manki logging area, nr Bulolo, 5000 ft [1524 m], 8.XII.1972 (F.R. Wylie & P. Shanahan); Manki logging area, 27.XII.1981, reared from fruit of *Ficus dammatopsis* (H. Roberts); Bainyik, 20.XII.1963 (McAlpine).

Biology. Breeds in the fruit of *Ficus*.

Genus *Clusiosoma* Malloch

Clusiosoma Malloch, 1926, Proc. Linn. Soc. N.S.W. 51: 547. Type-species: *Clusiosoma semifusca* Malloch (= *Acanthoneura minuta* de Meijere, 1913), by original designation.

This genus is part of the *Clusiosoma* complex of genera with *Cheesmanomyia* and *Hemiclusiosoma*, n. gen., characterized by having vein M_{3+4} and the basal portion of Cu setose above; having intrapostalar bristles but lacking pteropleurals; having the wings predominantly brown (Fig. 23b), without hyaline markings along margin or in cells; veins R_{2+3} and M_{1+2} straight, and M_{1+2} bare. It is superficially nearest to *Trypanocentra* Hendel but differs by having the face concave on the lower median portion in profile, with oral margin protruding (Fig. 29f); the mid tibia with 1 long and 1 short apical spine; male front femur swollen and densely bristled ventrally (Fig. 22b) or with a spinose protuberance near base (*Paraclusiosoma*, n. subgen.) (Fig. 31d), and the front tibia with densely white pilose padlike process on the posteroapex (Fig. 19b). Also, the male surstyli are elongate and slender and the lobes of the 10th sternum are rodlike (Fig. 29b).

Head (Fig. 29f) with upper superior fronto-orbital bristles subequal in size to postverticals. Ocellar bristles small, setalike. Wing mostly brown. Costal spines small, ca. 2× size of costal setae. Third costal section ca. 1/2 as long as 2nd. Vein R₁ ends before r-m, r-m near apical 3/5 of cell 1st M₂. Veins R₂₊₃ and R₄₊₅ straight, lobe of cell Cu ca. 1/2 as long as vein Cu_{1+1stA} (Fig. 19a). Dorsocentral bristles in line with supraalars, prescutellar bristles spaced ca. same distance apart as apical scutellars. Preapical scutellars much shorter than either of other 2 pairs. Male genitalia characterized by narrow cercus; surstyly elongate, slender, 1/2 longer than epan-drium; long rodlike lobes of 10th sternum with 2 blunt black teeth at apices; vanes of aedeagal apodeme fused (Fig. 29b). Female with 3 small round spermathecae that have introverted ducts (Fig. 29c). Seventh abdominal segment (base of ovipositor) 2/3 longer than wide, equal in length to terga 4-6 combined. Piercer of ovipositor blunt at apex, preapical setae as in Fig. 29a. Spiracles of 7th segment near base.

Malloch (1939a) revised the genus and presented a key to species. He erected the subgenus *Clusiosomina* for *puncticeps* Malloch, from New South Wales. It is treated herein as a distinct genus (**new status**), differentiated from *Clusiosoma* by having face vertical, not concave in middle, and epistomal margin not produced; vertex distinctly keeled; upper superior fronto-orbital bristles well developed, equal in size to outervertical bristles; gena much broader behind, ca. equal in width to front in ♂, mid tibia with 2 large, subequal apical spines; vein M₃₊₄ bare except for 2-4 setae at base near m-cu crossvein; ♂ lacking modification of front tibia but with 2 preapical anterodorsal bristles, front basitarsus with anteroapical lobe, densely covered with black spicules at apex; ♂ front coxa with dorsal comb of black setulae at apex. The only known species, *Clusiosomina puncticeps*, has face yellow with a brown spot on each side; thorax and abdomen mostly yellow, 4 longitudinal brown vittae on mesonotum, 2 vittae on scutellum, 2 vittae on abdomen; wing with vein M₃₊₄ bare except for 2-3 setae at base near m-cu crossvein, broad hyaline streak longitudinally down middle from near m crossvein to base. Four more complete details refer to original description.

Clusiosoma is here divided into 2 subgenera (1 new) comprising 13 species plus 1 questionable undescribed species.

Probably all species (plus *Clusiosomina*) breed in fruits of *Ficus* indigenous to those areas in which species of the 2 genera are found.

KEY TO SPECIES OF *CLUSIOSOMA* (INCLUDING *CLUSIOSOMINA*)

- 1. Face yellow, brown spot each side; thorax and abdomen mostly yellow, 4 longitudinal brown vittae on mesonotum, 2 vittae on scutellum and 2 vittae on abdomen; ♂ front tibia with 2 preapical anterodorsal bristles, front basitarsus with anteroapical process densely covered with black spicules at apex (Fig. 18) . . . (Australia: New South Wales, Queensland) ***Clusiosomina puncticeps***
 Not as above ***Clusiosoma*** 2
- 2 (1). Front femur of ♂ with spinose basoventral tubercle, lacking ventral bristles (Fig. 31a); mesonotum entirely black; interfacial area black, parafacials yellow in both sexes . . . (Papua New Guinea) (*Paracclusiosoma*) ***papuaense*, n. sp.**
 Front femur of ♂ with strong posteroventral bristles, no basal tubercle (Fig. 22b); mesonotum marked with yellow; if face black, parafacials also black 3
- 3 (2). Mesonotum yellow except for 4 short incomplete brown to blackish vittae; cervical sclerite, prosternum and sternopleuron yellow; 1 brown to black vittae on pleuron 4

- Mesonotum broadly black medially, or with 2 complete brown to black submedian vittae usually joined on posterior margin; lower lobe of cervical sclerite, at least anterodorsal margin of sternopleuron, and usually prosternum brown to black; pleuron mostly black or with 2 brown to black vittae 6
- 4 (3). Third antennal segment yellow; submedian mesonotal vittae short, abbreviated in both sexes 5
- Antenna entirely dull black; submedian mesonotal vittae complete in ♀, connected with black mark behind humerus and posteromedian mark between prescutellar bristles . . . (Papua New Guinea) **nigricorne, n. sp.**
- 5 (4). Black mark on anterior portion of mesonotum above humerus continuous with brown stripe extending diagonally to notopleural callus; basomedian portion of wing mostly hyaline or subhyaline basad of r-m crossvein (Fig. 24) . . . (New Guinea and nearby islands; Maluku; and Queensland, Australia) **minutum**
- Black mark on side of anterior margin of mesonotum isolated, not connected with brown mark on notopleuron; cells 1st M₂ and M₄ brown . . . (Papua New Guinea) **partitum**
- 6 (3). Narrow hyaline band along hind margin of wing from base to apex of vein M₁₊₂; brown coloring in cell R₅ not extending to r-m crossvein; brown in cells 1st M₂ and M₄ extends as broad longitudinal mark along most of vein M₃₊₄ (Fig. 23b) (*melanthe* species complex) 7
- Brown coloring along hind margin of wing extends to at least apical portion of cell M₄; other details not as above 8
- 7 (6). Front coxa, basal 1/2 of front femur, and prosternum dark brown to black; sternopleuron mostly black, mesopleuron with broad wedge-shaped mark transversely on hind portion; ♀ with rim of oral margin black; scutellum usually yellow, black only on basal margin; front with brown vittae down middle . . . (New Britain; New Ireland) **melanthe**
- Legs, face, and gena pale yellow except for faint brown longitudinal streak on posterobasal portion of front femur; prosternum and sternopleuron pale yellow except for narrow longitudinal vitta on dorsal margin of latter; mesopleuron yellow with narrow longitudinal vitta near upper margin from spiracle to hind margin and onto pteropleuron; scutellum mostly dark brown to black on disc, yellow on margin; front without brown vitta . . . (New Britain, ?Papua New Guinea) **dami, n. sp.**
- 8 (6). Legs and genae yellow; clypeus and prosternum usually so; face yellow (except in *daruense*, n. sp.); sternopleura predominantly yellow 9
- At least basal 1/2 of front femur dark brown to black; prosternum and sternopleuron mostly or entirely black; at least lower portion of face, gena, and clypeus black in ♂ (except in *subpullatum*, n. sp.) (*pullatum* species complex) 14
- 9 (8). Basal portion of wing hyaline or subhyaline including at least basal 1/2 of 2nd costal cell, cell R₅ nearly to r-m crossvein, basal 1/2 or more of 1st M₂, and all of cells R, M and Cu 10
- Anterior portion of wing above vein M₁₊₂ entirely dark brown to blackish except for hyaline 1st costal cell and cell R basad of humeral crossvein; posterior portion of wing lightly infuscated (Fig. 26a); ♂ front femur with moderately long anteroventral bristles (Fig. 26b) . . . (Papua New Guinea) **nigripenne, n. sp.**
- 10 (9). Costal cell entirely subhyaline, dark color ceasing abruptly at vein Sc (Fig. 22e); ♂ front femur with prominent anteroventral bristles, longer than diameter of front tibia (Fig. 22c) (*laterale* species complex) 11

- Dark brown coloring of wing encroaches into at least apical portion of 2nd costal cell; anteroventral surface of ♂ front femur with only short black setalike bristles [except in *vittiferum* (Walker)] 12
- 11 (10). Face yellow; brown marking in wing diagonal from apex of 2nd costal cell to apical portion of cell R₄ (Fig. 22e) . . . (New Guinea; ?Queensland, Australia) **laterale**
Lower 2/3 of ♂ face black; mark of brown along vein M₃₊₄ to beyond level with r-m crossvein (Fig. 21a) . . . (Daru, Papua New Guinea) **daruense, n. sp.**
- 12 (10). Longitudinal pleural vittae narrow, only thin line of brown near upper margin of sternopleuron; prosternum yellow 13
Pleural vittae broad, upper covering most of mesopleuron, lower covering upper 1/2 of sternopleuron; prosternum brown; costal cell brown only at apex; ♀ with mid and hind femora and basal 1/2 of hind tibia blackened . . . (Papua New Guinea) **centrale**
- 13 (12). Brown coloring filling apical 1/2 or more of 2nd costal cell; prominent yellow median vitta from front margin of mesonotum to ca. level with dorsocentral bristles; prominent brown vitta on sternopleuron; anterior surface of ♂ front femur with only short black setulae . . . (Solomon Is) **pleurale**
Only apex of 2nd costal cell brown; median portion of mesonotum tinged with yellow, not distinctly vittate, complete brown vitta on each side of mesonotum from above humerus to wing base; brown vitta on sternopleuron faint, interrupted; ♂ front femur with row of black anteroventral bristles, length slightly greater than width of tibia . . . (New Guinea) **vittiferum**
- 14 (8). Prosternum entirely black, mesopleuron black except for yellow vitta on dorsal margin; palpus mostly or entirely brown to black; ♂ with face and gena all or nearly all black, posteroventral portion of occiput broadly shining black . . . (Papua New Guinea) **pullatum**
Both sexes with yellow face, gena, palpus (except for brown posterobasal spot), and occiput (except for upper 1/3); prosternum mostly yellow, brown to black in central portion; mesopleuron narrowly yellow along ventral margin . . . (Papua New Guinea) **subpullatum, n. sp.**

Clusiosoma (*Clusiosoma*) **centrale** Malloch

Fig. 19

Clusiosoma centralis Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 426. Type-locality: Wewak, Papua New Guinea. Type ♂ in CIHS.

Diagnosis. This fits in a species complex characterized by a mesonotum that is broadly black down the middle, wing with the 1st 2 costal sections hyaline except brown at apex of 2nd, and the male front femur with only short black bristles along the anteroventral surface. It fits nearest to *C. pleurale* Malloch, from the Solomon Is, but differs by having the 2nd costal cell brown only at the apex; broad brown to black vittae on the pleura, upper covering most of mesopleuron, lower covering upper 1/2–2/3 of sternopleuron; the prosternum brown and the median portion of the mesonotum broadly black with only a faint indication of a narrow yellow vitta from the anterior margin to ca. level of suture.

Occiput dark brown to black in upper median, posterior, and ventral portions. Front yellow, brown discoloration down middle. Face and gena yellow; clypeus brown, tinged rufous. Sternopleuron largely black, rufous on ventral portion. Other characters fitting those of most *Clusiosoma*. Wing as in Fig. 19a, front femur and tibia as in Fig. 19b.

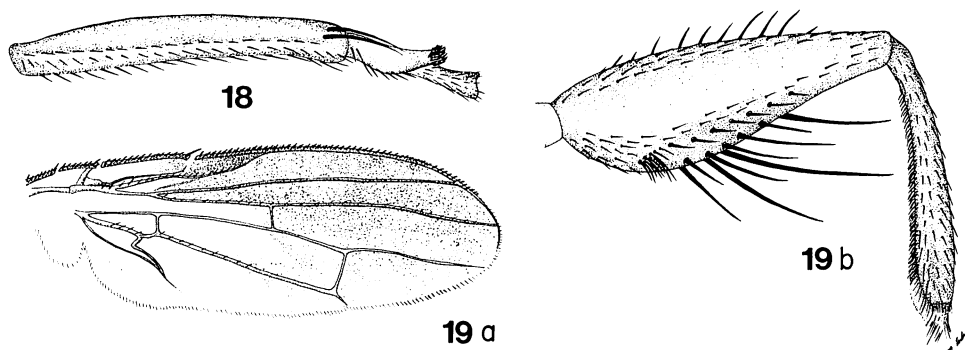


FIG. 18-19. 18, *Clusiosomina puncticeps*, ♂ front tibia. 19, *Clusiosoma centrale*: a, wing; b, ♂ front femur and tibia, anterior view.

Distribution. Papua New Guinea.

Specimens examined. Type and 3♂ paratypes (CIHS). 3♂, 1♀, PAPUA NEW GUINEA: Central Prov, 20 km SE of Port Moresby, 20.II.1983, swept from bushes (J.W. Ismay); 1♂, Rigo Distr, SE of Port Moresby, VII.1962 (J. Pullen).

Remarks. Malloch gave the body length as 4.5–5.5 mm. Type measurements: body 5.2 mm, wing 4.8 mm.

Clusiosoma (*Clusiosoma*) *dami* Hardy, new species

Fig. 20

Diagnosis. This species fits in the *melanthe* species complex by having a narrow hyaline band extending around the hind margin of the wing from base to apex to M_{1+2} , and the brown coloring in middle of wing not extending to r-m crossvein in cell R_5 but filling most of cells 1st M_2 and M_4 , broadly covering vein M_{3+4} almost to its base. It differs from *C. melanthe* Hering by having the legs, face, and gena entirely pale yellow except for a faint longitudinal streak of brown on the posterobasal portions of the front femur; the prosternum and sternopleuron are pale yellow except for a narrow yellow longitudinal vitta on the dorsal margin of the latter; the mesopleuron is yellow with a narrow longitudinal vitta near the upper margin from spiracle to hind margin, extending onto pteropleuron; the front is entirely pale colored, without a brown vitta down middle; and the scutellum is dark brown on the disc, yellow on margin.

♂ *Head.* Fits general characteristics of *Clusiosoma*. Predominantly pale yellow, brown on upper portion of occiput, ground color faint brown on upper 1/2 of front, especially evident on frontal plates. *Thorax.* Pale yellow, broad shining dark brown to black median mark from anterior to posterior margins, slightly interrupted by narrow streak of yellow on anteromedian portion, slightly expanded posteriorly almost filling area between inner postalar bristles and extending onto disc of scutellum; narrow brown arm from side of anterior portion of black median area just above humerus across notopleural callus to wing base. Pleura pale yellow, marked as in diagnosis above with brown extending across cervical sclerite onto front portion of propleuron. Metanotum and postscutellum tinged with brown. *Legs.* Pale yellow, streak of pale brown on

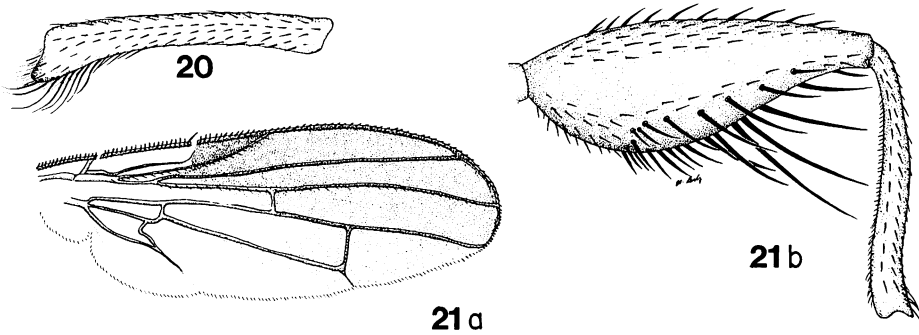


FIG. 20-21. 20, *Clusiosoma dami*, ♂ front tibia. 21, *Clusiosoma daruense*: a, wing; b, ♂ front femur and tibia, anterior view.

posterobasal portion of front femur. Front femur swollen, 2 irregular rows of ca. 8 strong posteroventral bristles, several black ventral spinules near basal $\frac{3}{4}$, short black setae along anteroventral surface. Fleshy projection at end of tibia with moderately long curved black cilia as in Fig. 20. *Wing*. As noted above and fitting those of *C. melanthe* (Fig. 23b). *Abdomen*. Mostly shining dark brown to blackish, yellow on 1st, most of 2nd, and on side and venter of 3rd. Genitalia not dissected for study.

Lengths: body 4.5 mm; wing 3.7 mm.

♀. As ♂ except for lack of ornamentation of front leg. Front femur with ca. 4 moderately strong posteroventral bristles. Basal segment of ovipositor ca. equal in length to terga 4-6. Ovipositor not extruded for study.

Lengths: body, excluding ovipositor, 4.1-4.5 mm; wings 4.0-4.3 mm.

Holotype ♂ (BPBM 13,338), allotype ♀ (BPBM), 3♂, 5♀ paratypes, PNG: BISMARCK ARCH.: NEW BRITAIN: Dami, 3.II.1983, collected in forest (J.W. Ismay); 3♀ paratypes, NEW BRITAIN: Yalom, 1000 m, 23.V.1962 (*Noona Dan* Exped. 1961-62); Keravat, 30 m, 2.IV.1956 (J.L. Gressitt); Nahavio, 6.II.1983, on river bank. Paratypes in BPBM, DPIK, and ZMUC.

Remarks. One female specimen labeled "PNG: New Guinea (SE): Central Prov., 20 km SE Port Moresby, 27.II.1983, swept from bushes, J.W. Ismay," appears to belong to this species but is not designated as a paratype. Further specimens from New Guinea are needed for study.

Etymology. The specific epithet uses the type-locality, Dami, as a noun in apposition.

Clusiosoma (*Clusiosoma*) *daruense* Hardy, new species

Fig. 21

Diagnosis. This species fits close to *C. laterale* (Walker) by having the same body coloration and wing markings and by the development of the male front legs. It differs by having the face shining black on lower $\frac{2}{3}$ and having a broad brown mark along vein M_{3+4} basad of r-m crossvein, similar to *C. melanthe* (Fig. 21a). Otherwise, it fits the description of *laterale*.

♂. Front femur with row of 5 or 6 rather strong anteroventral bristles, numerous short black ventral spinules. Anterior view as in Fig. 21b. Front tibia with short dense brown to blackish

ventral setae; apical protuberance entirely yellow, yellow-brown hairs around fringe.

Lengths: body 4.4 mm; wing 4.0 mm.

♀. Unknown.

Holotype ♂ (BPBM 13,339), 5♂ paratypes, PAPUA NEW GUINEA: Western Prov, Daru, T. Wyborn property, 6.VI.1980, in endemic rain forest on fruits and leaves of *Eugenia* sp. (R.A.I. Drew). 1 paratype in BPBM, others DPIK and UH.

Etymology. The specific epithet is a combination of the type-locality, Daru, and the Latin *ensis*, "locality" or "place."

Clusiosoma (Clusiosoma) laterale (Walker)

Fig. 22

Dacus lateralis Walker, 1865, J. Proc. Linn. Soc. Lond., Zool. 8: 123. Type-locality: "New Guinea." Type ♀ in BMNH.

Clusiosoma biseriata Malloch, 1939. Proc. Linn. Soc. N.S.W. 64: 426. Type-locality: Wewak, Papua New Guinea. For synonymy refer to Hardy (1959: 177). Type ♂ in CIHS.

Diagnosis. This species fits in the complex characterized by a mesonotum that is broadly black through median portion and has an arm of black extending along side from behind humerus to wing base; yellow legs, face, gena, and clypeus; and mostly yellow sternopleura. It seems nearest to *C. centrale* but differs by having entirely subhyaline costal cells (Fig. 22e); a yellow prosternum; narrow mesopleural brown vitta; the sternopleural brown mark mostly confined to anterior portion; and the male front femur with 3-4 strong anteroventral bristles (Fig. 22c).

Legs all yellow. Front femur of ♂ with ca. 8 rather strong posteroventral bristles arranged in 2 rows (Fig. 22b); anteroventral surface with row of 4-6 moderate bristles (Fig. 22c), longest ca. as long as diameter of tibia. Fringe of curved hairs along posterior border of padlike extension at apex of tibia pale brown, rather inconspicuous, not greatly extended beyond dense white pile of pad (Fig. 22d). Lower lobe of cervical sclerite brown to black. Abdomen yellow, tinged with brown on basal 3 terga. Terga 4-5 of ♂ brown to black. Male genitalia as in Fig. 22a. Abdomen more intensely yellow in ♀.

Lengths: body and wing each 4.0-5.0 mm.

Distribution. Widespread throughout island of New Guinea. D.K. McAlpine (in litt.) recorded it from Queensland, Australia.

Specimens examined. Holotype ♂ of both *lateralis* and *biseriata*, 3 paratypes of *biseriata* (CIHS). Ca. 100 specimens with following data. PAPUA NEW GUINEA: logging road nr Bulolo, 30.I.1979 (H. Roberts); Aroana Estate, Aroa Riv, 29.XI-2.XII.1963 (D.K. McAlpine); lower Sepik Riv, X.1959 (R. Pullen); Bainyik, 20.XII.1963 (McAlpine); Morobe Prov, Wau, 6.IX.1981, in rain forest (J.W. Ismay); Kokoda, 10.XII.1972 (G.A. Holloway); Finschhafen, IV.1944 (F.E. Skinner); Daru, T. Wyborn property, 6.VI.1980 (R. Drew). IRIAN JAYA: Fak Fak, Vogelkop, 12.VI.1959 (T.C. Maa); River Tor, 4 km E of Hol Maffen, 4.VII.1959 (Maa); Genjam, 40 km W of Hollandia, 1-10.III.1960 (Maa); Biak, 15.III.1952 (L.D. Brongersma & W.J. Roosdorp).

Remarks. One male specimen from Wanpit Village, nr Gurakor Village, nr Wau, Papua New Guinea [1950 m, 7.VII.1957 (D.E. Hardy)] has wing markings and the characteristics of male front legs of *C. laterale* but the intermediate anteroventral row of black bristles are not quite as strong as in *laterale*. The coloration characteristics of the body are very similar to those of *C. subpullatum*, n. sp., with prosternum and sterno-

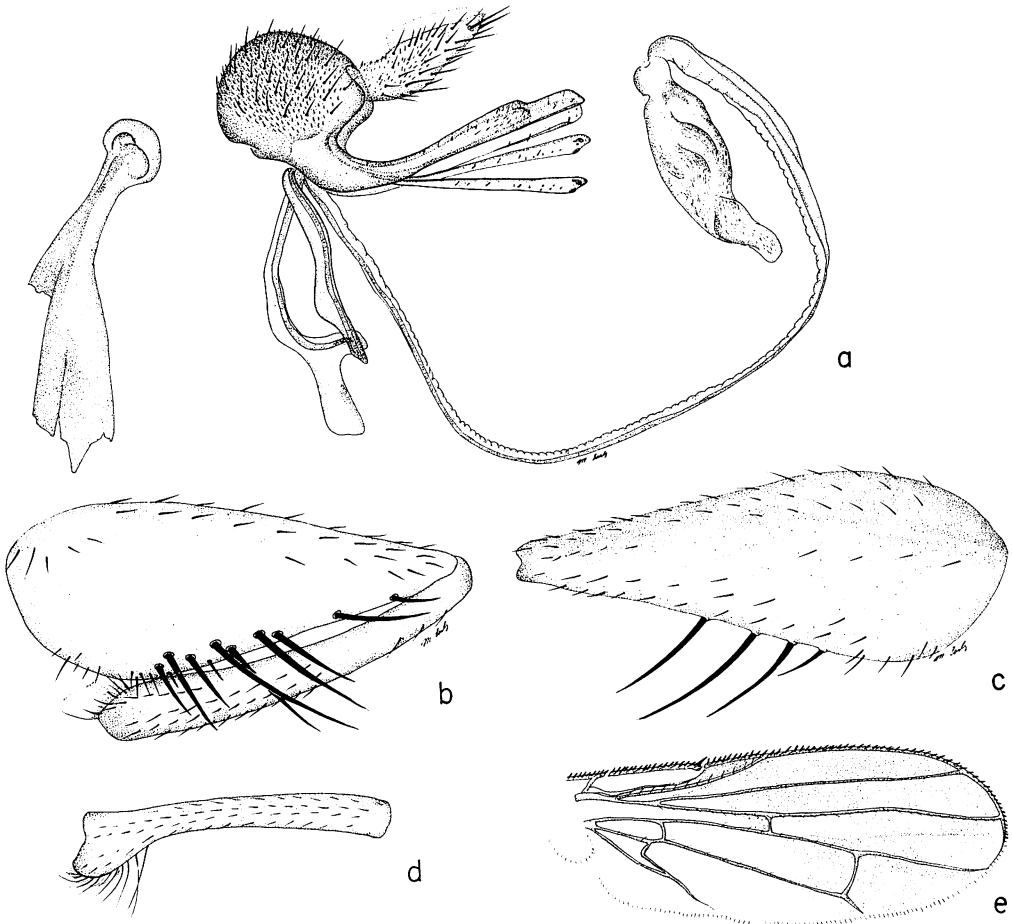


FIG. 22. *Clusiosoma laterale*: a, ♂ genitalia; b, ♂ front femur and tibia, posterior view; c, ♂ front femur, anterior view; d, ♂ front tibia; e, wing.

pleuron black, front femora mostly brown to black, and mid femora tinged with brown. It differs from *subpullatum* by having the 2nd costal section entirely hyaline, the hind femora all yellow, and each front femur of the male with a row of moderately strong anteroventral bristles. It is not being described; further specimens need to be studied.

Clusiosoma (*Clusiosoma*) *melanthe* Hering

Fig. 23

Clusiosoma melanthes Hering, 1947, *Siruna Seva* 6: 2. Type-locality: Kokope, New Britain. Type ♀ in BMNH.

Diagnosis. This species fits close to *C. pullatum* Hering. It differs by having the femora mostly yellow, with basal 1/2 of front femur black and bases of mid and hind femora tinged with brown; tibiae mostly brown to black; the scutellum yellow except

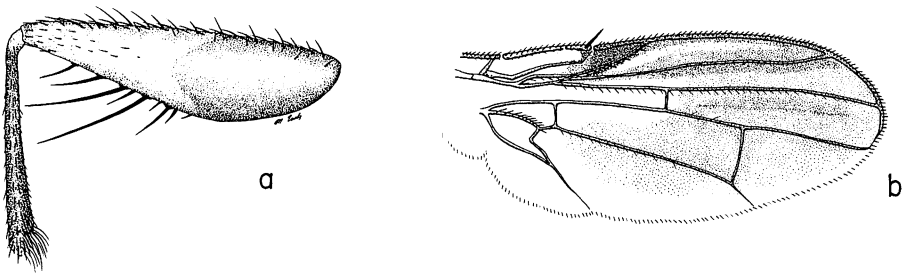


FIG. 23. *Clusiosoma melanthe*: a, ♂ front femur and tibia, posterior view; b, wing.

for basal margin; the sternopleuron broadly yellow on hind margin; the hind margin of wing narrowly hyaline to apex of cell 2nd M_2 , brown color filling much of cell 1st M_2 , extending as a broad mark across vein M_{3+4} almost to its base; and cell R_5 hyaline through the basal portion to beyond r-m crossvein (Fig. 23b). The male face is largely yellow, black only along oral margin and the front femur lacks densely placed ventral spicules (Fig. 23a).

For further details refer to the original description and to characters in the key above and under *C. dami*, n. sp.

Lengths: body and wing each 3.5–4.0 mm.

Distribution. New Britain and New Ireland.

Specimens examined. Holotype ♀ and 1♂ paratype (BMNH). PNG: BISMARCK ARCH.: NEW IRELAND: 7♂, 4♀, Lemkamin, 15.IV.1962 (*Noona Dan* Exped); 1♂, Yalom, 18.V.1962, (*Noona Dan* Exped); 4♂, 1♀, Gilingil Pl'n, 2 m, 6–16.VII.1956 (J.L. Gressitt); NEW BRITAIN: Dami, 3.II.1983, in forest (J.W. Ismay).

Remarks. One female specimen [Papua New Guinea: 20 km SE of Port Moresby, 1.I.1982 (J.W. Ismay)] resembles *melanthe* by having dark coloring extending along vein M_{3+4} , but the brown coloring of the wings extends slightly basad of the r-m crossvein, the prosternum is yellow, and the sternopleuron is mostly yellow.

Clusiosoma (Clusiosoma) minutum (de Meijere)

Fig. 24

Acanthoneura minuta de Meijere, 1913, Bijdr. Dierkd. 19: 62. Type-locality: Saonek Island (just S of Waigeo, off W end of Irian Jaya). Type ♂ in ZMUA.

Clusiosoma semifusca Malloch, 1926, Proc. Linn. Soc. N.S.W. 51: 548. Type-locality: Cairns, Queensland, Australia. Type ♂ in BMNH. **New synonymy.**

Diagnosis. This species fits close to *C. nigricorne*, n. sp., but differs by having the antennae all yellow and brown markings in wing less intense; also, the submedian brown vittae of the female mesonotum are short, abbreviated, not complete. It can be differentiated from *C. partitum* Malloch by a continuous black vitta on the side of the mesonotum from above the humerus to the wing base and the basomedian portion of the wing, which is largely hyaline or subhyaline basad of the r-m crossvein (Fig. 24). Otherwise it fits the description of *nigricorne*, n. sp.

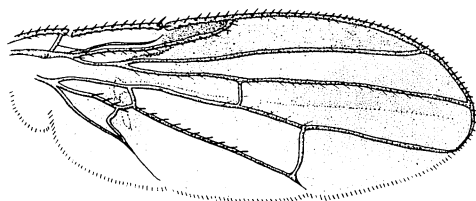


FIG. 24. *Clusiosoma minutum*, wing.

Front femur of ♂ with only short black anteroventral setae, posteroventral surface with ca. 5 strong bristles in outer row, 5 or more shorter bristles in inner row.

Lengths: body and wing each 2.8–4.5 mm.

Distribution. Widespread throughout the island of New Guinea, Waigeo, and adjacent islands; Maluku; and Queensland, Australia.

Specimens examined. Types of both taxa. Ca. 12 specimens with the following data. PAPUA NEW GUINEA: Kundiava, Chimbu Riv, 27.III.1964 (D.H. Colless); 20 km SE of Port Moresby, 27.II.1983, swept from bushes (J.W. Ismay). IRIAN JAYA: Fak Fak, Vogelkop, S Coast of Bomberai, 10–100 m, 12.VI.1959 (T.C. Maa). MALUKU: Ambon, "2.08" [no collector given]. AUSTRALIA: Queensland: Cairns, 10.IX.[19]28 [no collector given]; Claudie Riv, nr Mt Lamond, 1.VI.1966 (D.K. McAlpine & Bamaga); same loc., 30.V.1981 (G. Sanewski).

Clusiosoma (*Clusiosoma*) *nigricorne* Hardy, new species

Fig. 25

Diagnosis. This species fits close to *C. minutum*, but it differs by having the antennae of both sexes entirely dull black, not yellow, and the mesonotum of the female with complete submedian brown to black vittae.

♂. *Head.* Yellow, including apendages except for all black antenna, dark shining brown to black upper 1/4 of occiput, and brown to black stripe down middle of front. Upper superior fronto-orbital distinctly smaller than postocellars. *Thorax.* Pale yellow, quadrate black mark above humerus continuous on side of mesonotum as narrow vitta extending from ca. level with anterior notopleural bristle almost to level with supraalars; narrow black vitta on side at level with intrapostalar bristles extending ca. to level with posterior notopleurals; brown spot on posteromedian portion of mesonotum between prescutellar bristles; mediodorsal portion of scutellum, metanotum, and postscutellum dark brown to black; narrow black longitudinal vitta through median portion of mesopleuron extending onto pro- and pteropleura; small spot of pale brown on upper margin of mesosternum. *Legs.* Yellow. Front femur with only a few short black anteroventral setae, 5 large posteroventral bristles in outer row, and ca. 5 short bristles in inner row, 7–8 short ventral spicules near base of swollen area (Fig. 25a). Ventral pile of front tibia pale yellow. *Wing.* Very similar to *C. minutum*, faint tinge of brown in apex of 2nd costal section, median portion largely subhyaline basad of crossvein r-m (Fig. 25b). *Abdomen.* First 3 tergum broadly yellow on side, brown down medially, terga 4 and 5 dark brown to black. Fifth tergum 2× longer than 4th.

Lengths: body 3.7–4.0 mm; wing 3.5–3.7 mm.

♀. Fits description of ♂ in most details. Submedian vittae on mesonotum continuous with black marks behind humeri, joined to median mark between prescutellar bristles. Abdomen

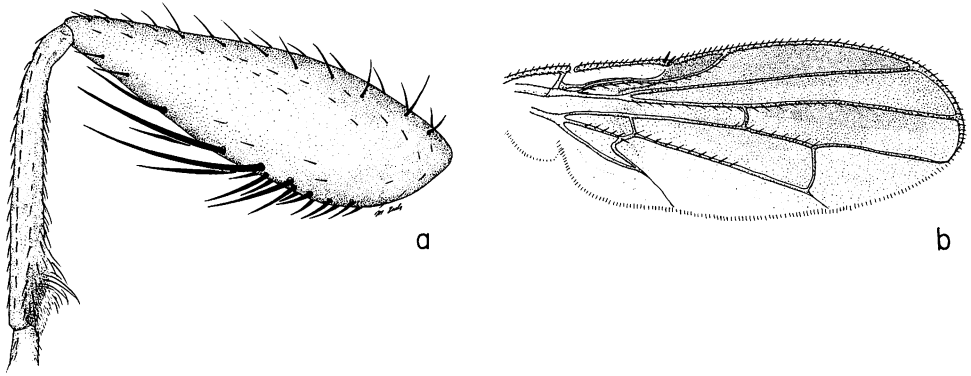


FIG. 25. *Clusiosoma nigricorne*: a, ♂ front femur and tibia, posterior view; b, wing.

mostly yellow to rufous, tinged brown down middle of terga. Basal segment of ovipositor subshining black, ca. equal in length to terga 3-6.

Holotype ♂ (BPBM 13,340), allotype ♀ (BPBM) 3♂, 5♀ paratypes, PAPUA NEW GUINEA: Central Prov, 20 km SE of Port Moresby, 1.I-20.II.1982, 20-27.II.1983, & 11.III.1983, swept from bushes and trees (J.W. Ismay). Paratypes in BPBM, DPIK, and UH.

Etymology. The specific epithet combines the Latin words *nigra*, "black," and *cornu*, "horn"; it refers to the black antennae.

Clusiosoma (*Clusiosoma*) *nigripenne* Hardy, new species

Fig. 26

Diagnosis. This species fits near *C. laterale* by having moderately strong anteroventral bristles on the front femur, and by having the face, gena, palpus, prosternum and legs yellow and sternopleuron mostly yellow. It differs by having the wing predominantly dark brown to blackish and the apical projection on the front tibia black. It probably is most closely related to *C. pleurale* Malloch, but differs by having the wing dark-colored on the anterior portion to base of 2nd costal cell, all of cell R₅, and cell R to level of humeral crossvein; by having dark coloration through cell M, and the posterior portion of the wing slightly infuscated (Fig. 26b). The male front femur has strong anteroventral bristles, and the apical projection of the front tibia is black.

♂. *Head*. Yellow including appendages, black median vitta from ocellar triangle across 2/3 length of front, upper 1/4 of occiput shining black, mentum brown to black, tinge of brown on 2nd antennal segment. *Thorax*. Mesonotum mostly black, broad postsutural yellow vitta on side, yellow median vitta from anterior margin to about halfway between dorsocentral and prescutellar bristles. Scutellum black medially, broadly yellow on margin. Cervical sclerite shining black, black vitta through middle of mesopleuron continuous from propleuron to pteropleuron, pleurotergite, and metanotum. Broad mark of black over anterior portion of sternopleuron continuous across mesosternum extending part way along upper margin, ending well before sternopleural bristles. *Legs*. Front femur with usual biseriate posteroventral bristles, short ventral spicules near base of swollen portion, with ca. 5 moderately strong anteroventral bristles (Fig. 26a). Front tibia with short closely placed brown to black ventral setae, apical projection black on dorsal surface,

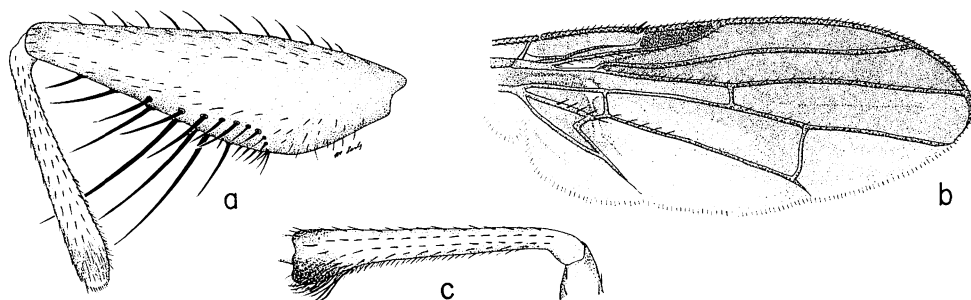


FIG. 26. *Clusiosoma nigripenne*: a, ♂ front leg, anterior view; b, wing; c, ♂ front tibia.

fringed with moderately long black hairs (Fig. 26c). *Wing* (Fig. 26b). Vein M_{3+4} with only 5 or 6 scattered setae basad of r-m crossvein. *Abdomen*. Yellow on basal 2 segments, brown on side, terga 3 and 4 mostly black on side, brownish yellow in middle, 5th tergum black.

Lengths: body and wing each 5.20–5.35 mm.

♀. As ♂ except for secondary sexual characters. Abdomen mostly yellow, tinged with brown on median portions of terga. Basal segment of ovipositor mostly black, faintly tinged with rufous on posteromedial portion, ca. equal in length to terga 3–6. Median vitta of mesonotum variable, to just slightly beyond suture in some specimens, in others to beyond level with dorsocentral bristles.

Holotype ♂ (BPBM 13,341), allotype ♀ (BPBM), PAPUA NEW GUINEA: Western Highlands Prov, Kuk, 19.X.1981, on foliage of trees (J.W. Ismay). 7♂, 7♀ paratypes with following data: PAPUA NEW GUINEA: same as type; Morobe Prov, Wau, 1200 m, VII–VIII 1961, 1965, & 1966, malaise trap (J. Sedlacek & J.L. Gressitt); Wau, Mt Kaindi, 1260 m, 5.X.1964 (J. Sedlacek). Paratypes in BPBM, DPIK, and UH.

Remarks. One female specimen examined from Wau, Papua New Guinea [1250 m, 7.VIII.1965 (J. & M. Sedlacek)] appears closely related to *nigripenne* but differs by having the wing totally dark brown except for a hyaline longitudinal streak through cell 1st M_2 ; by having the cervical sclerite, sternopleuron, and mesosternum all yellow, and the abdomen black with a yellow longitudinal vitta down the middle; also vein M_{3+4} is setose nearly to m crossvein. It is not being described; further specimens need to be studied.

Etymology. The specific epithet combines the Latin words *niger*, “black,” and *penna*, “feather” or “wing.” It refers to the dark brown to blackish wing.

Clusiosoma (*Clusiosoma*) *partitum* Malloch

Fig. 27

Clusiosoma partita Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 425. Type-locality: Wewak, Papua New Guinea. Type ♂ in CIHS.

Diagnosis. Malloch described *C. partitum* from a male and said “very similar to *semifusca*, differing in having the black mark on the anterior margin of the mesonotum not connected with dark posterior line, the pleural vitta broader in front, the fore femur in the male with only three or four long, and about the same number of short posteroventral bristles and practically no black anteroventral setulae, and the wing browned from base of discal cell to apex, only costal cell, base of anterior, and all of

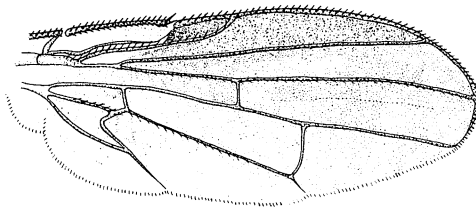


FIG. 27. *Clusiosoma partitum*, wing.

posterior basal cell, the anal cell, and anal angle of wing, subhyaline. Inner crossvein near middle of discal cell."

This species is obviously very close to *C. minutum*. The only characters I see for separating it in the specimens studied are an isolated black mark on the side of the anterior margin of the mesonotum (not connected with brown mark on notopleuron) and all brown cells 1st M_2 and M_4 (Fig. 27). Also, the male front femur lacks black setae on the anteroventral margin, the posteroventral margin has only 3 strong, plus several short, bristles in the outer row and 5-6 short bristles in the inner row.

Lengths: body 3.75 mm; wing 3.5 mm.

Distribution. Papua New Guinea.

Specimens examined. Holotype and 2♂ paratypes (CIHS). PAPUA NEW GUINEA: Morobe Prov, 3♀, Wau, 28.VII.1972, 23.IX.1972, 27.X.1972 (B.S. Cheary); 1♀, 17.V.1976, on vegetation, understory of secondary forest (W.C. Gagné). 1♂, Bulolo, Forest Stn, 20.VI.1978, on *Ficus* fruit (H. Ivasai).

Clusiosoma (*Clusiosoma*) *pleurale* Malloch

Fig. 28

Clusiosoma pleuralis Malloch, 1939, Ann. Mag. Nat. Hist. Ser. 11, 4: 259. Type-locality: Kukum, Guadalcanal, Solomon Islands. Type ♂ in BMNH.

Diagnosis. This species fits near *C. centrale*. It differs by having brown filling the apical 1/2 of the 2nd costal cell; a prominent, yellow median vitta on the mesonotum from the anterior margin to beyond level with dorsocentral bristles; the prosternum yellow; and the occiput entirely yellow except for a brown upper median portion. It

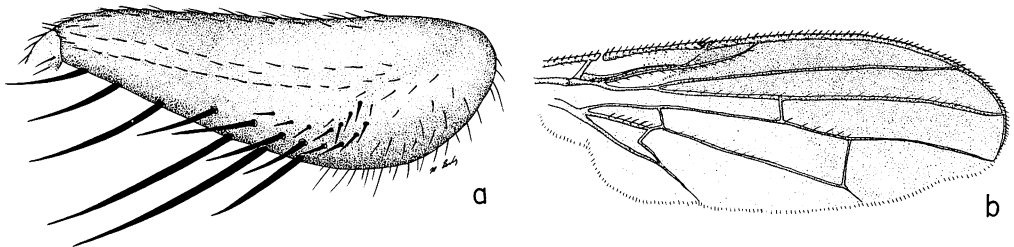


FIG. 28. *Clusiosoma pleurale*: a, ♂ front femur, anterior view; b, wing.

also fits near *C. vittiferum* (Walker) but differs by having brown extending halfway or more through the 2nd costal section; a prominent yellow vitta on the anteromedian portion of the mesonotum, lacking a complete band of brown along side of the mesonotum from above the humerus to the wing base; a complete brown to black longitudinal vitta on the sternopleuron; and the anteroventral surface of the male front femur lacking a row of prominent bristles (Fig. 28a).

Mesonotum largely yellow, black mark above humerus that forks into narrow black line along lateral margin on notopleuron almost to wing base, and prominent submedian vittae from anterior margin, fused together on posterior margin. Hind margin of mesonotum broadly black, coloration continuous anteriorly as short black vitta on side almost to suture in line with intrapostalar bristle. In some specimens posteromedian portion of mesonotum broadly blackened with only short indication of lateral vittae. Mesopleural black vitta narrow, ca. equal in width to 1/3 length of sclerite, extending from metapleuron to propleuron. Sternopleural black vitta also narrow, occupying upper anterior 2/3 of sclerite, extending across mesosternum. Pleura otherwise yellow. Anteroventral surface of ♂ front femur with only short black setulae (Fig. 28a); posteroventral surface rather thickly bristled. Wing as in Fig. 28b. For further details refer to original description.

Lengths: Malloch gave body length as 3.0–4.5 mm. Specimens examined measure 3.5–4.0 mm for body and 3.4–3.7 mm for wing.

Distribution. Solomon Islands.

Specimens examined. Holotype and 6 paratypes (BMNH). 2♂, 1♀ with following data: SOLOMON IS: Shortland I: Bumberg, 8.X.1936 (E.A. Lever); Vella Lavella: Pusingama, XI.1963 (P. Shanahan); San Cristoval: Kira Kira, 14.VII.1960 (C.W. O'Brien).

Clusiosoma (Clusiosoma) pullatum Hering

Fig. 29

Clusiosoma pullatum Hering, 1941, Ann. Hist. Nat. Mus. Natl. Hung., Zool. 34: 60. Type-locality: Simbang, Huon Gulf, Papua New Guinea. Type ♂ in TMB.

Diagnosis. This species can be differentiated from all known *Clusiosoma* by the mostly or entirely black coxae, femora, prosternum, and sternopleuron and all black face, palpus, and mentum of male. It fits near *C. melanthe* but is separated by the above characters and by having the front tibia mostly yellow; the front femur with densely placed short black ventral spicules in the middle basad of the posteroventral bristles, only 1 row of short black anteroventral setae (Fig. 29d); the hind margin of wing brown to blackish; and the apical 1/2 of cell 1st M₂ subhyaline (Fig. 29e). It differs from *subpullatum*, n. sp., by the male's all black face, gena, lower portion of occiput, prosternum and lower 4/5 of mesopleuron.

♂. Genitalia as in Fig. 29b, apex of female piercer and spermathecae as in Fig. 29a and 29c.

♀. Face, gena and lower 2/3–3/4 of occiput yellow. Abdomen yellow, tinged with brown on terga 1–6.

Lengths: body 5.0–5.5 mm; wing 4.5–5.0 mm.

Distribution. Papua New Guinea.

Specimens examined. Holotype ♂ and 2♂, 2♀ paratypes (TMB). Ca. 35♂, ♀ with following data. PAPUA NEW GUINEA: NE Stony logging area, nr Bulolo, lowland rain forest, 30.I.1979 (H. Roberts); upper Manki

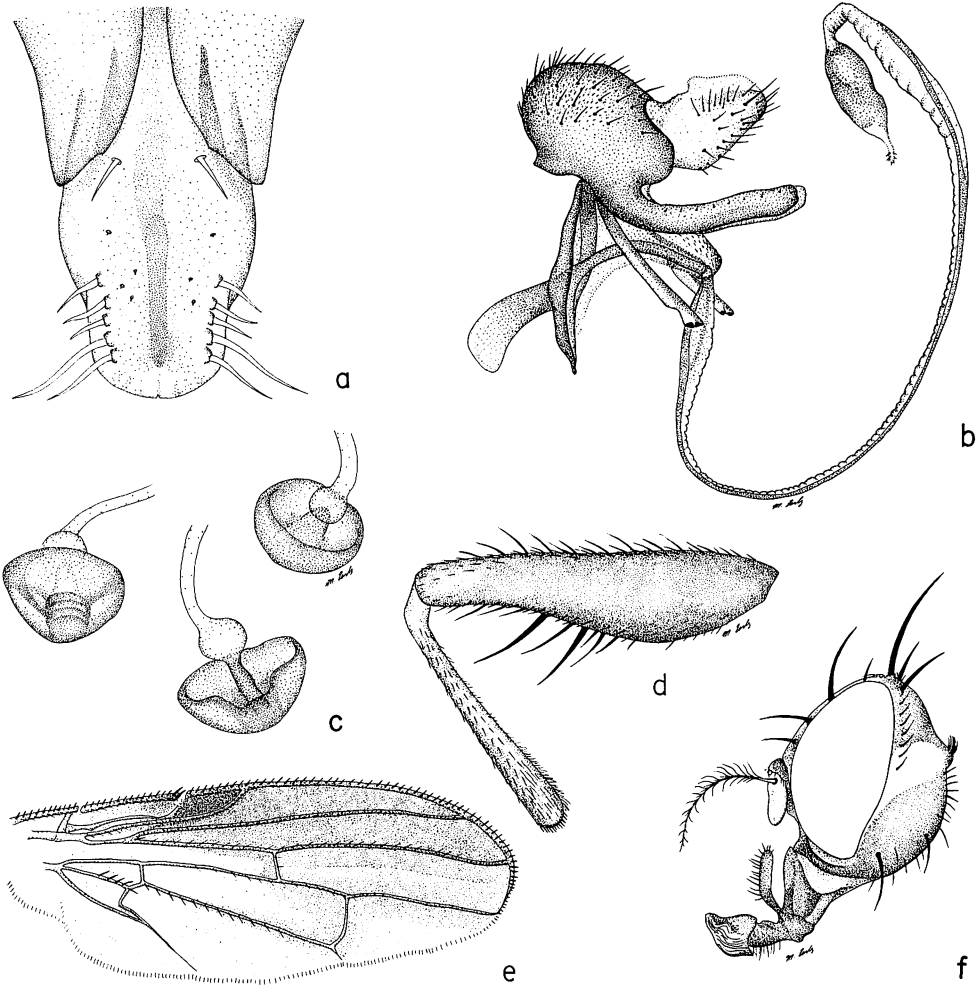


FIG. 29. *Clusiosoma pullatum*: a, ♀ apex of piercer; b, ♂ genitalia; c, ♀ spermathecae; d, ♂ front leg, anterior view; e, wing; f, head.

logging area, nr Bulolo, 5000 ft [1524 m], 16.III.1973 (F.R. Wylie & P. Shanahan); Morobe Distr, Bumbu Riv, 8 km N of Lae, 22.XI.1972 (G.A. Holloway); Wau, 1000 m, 17.V.1976, secondary forest understory (W.C. Gagné); Aroana Estate, Roa Riv, 29.XI.1963 (D.K. McAlpine); Popondetta Subdistr, Ongaho, 13.X.1963 (McAlpine); Popondetta Subdistr, Buri, nr Sasombata, 30.X.1963 (McAlpine); 20 km SE of Port Moresby, 500 m, 13.VI-17.VII.1983, swept from low vegetation (J.W. Ismay).

***Clusiosoma (Clusiosoma) subpullatum* Hardy, new species**

Fig. 30

Diagnosis. This species fits near *C. pullatum* but both sexes have a yellow face, gena, palpus (except for basal brown mark on outer surface), and occiput (except for upper 1/3); the lower margin of the mesopleuron narrowly yellow, the prosternum mostly yellow with a brown to black mark in middle, lower portion of sternopleuron often

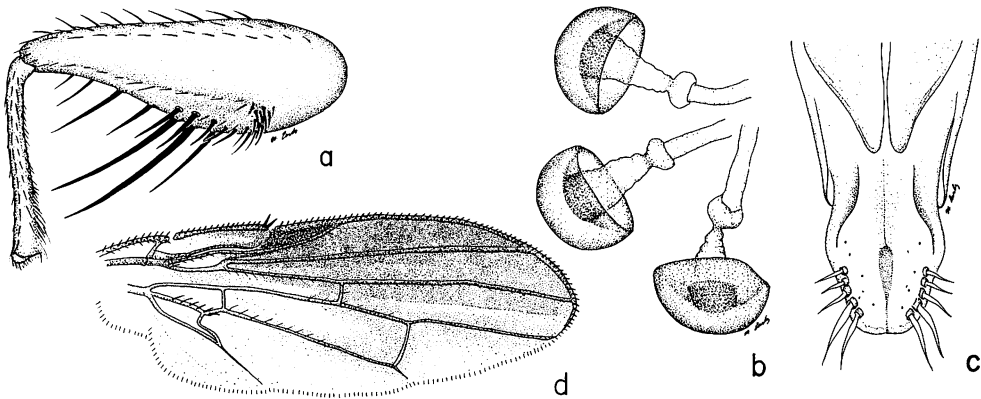


FIG. 30. *Clusiosoma subpullatum*: a, ♂ front leg, anterior view; b, ♀ spermathecae; c, ♀ apex of piercer; d, wing.

tinged with yellow. The legs are less intensely blackened than in *pullatum*; the coxae and femora are yellow, tinged dark brown to blackish; and the middle tibiae all yellow. Otherwise it fits the description of the species-group characterized by having the mesonotum black except for a pair of postsutural lateral vittae and, except for the lateral margin, scutellum black.

♂. *Head and thorax* as *pullatum* and as noted above. *Legs*. Front leg as in Fig. 30a, 2 rows of moderately strong posteroventral bristles and subbasal clump of ventral spicules, only single row of short black setae along anteroventral surface. Front tibia dense dark brown to black setose ventrally, with fringe of moderately long brown to black hairs around margin of apicoventral appendage. *Wing* (Fig. 30d). Apex of 2nd costal section broadly brown, brown color extending through cell R₅ basad of r-m crossvein and through apical 1/3 of cell 1st M₂. *Abdomen*. Yellow, tinged brown on 1st 3 terga, terga 4 and 5 dark brown to blackish. Genitalia mostly brown to black, cercus and surstylus yellow.

Lengths: body 4.7–5.25 mm; wing 4.3–4.7 mm.

♀. As ♂ except for secondary sexual characters. Abdomen mostly yellow, tinged brown on lateral margin, basal segment of ovipositor shining black, subequal in length to terga 3–6. Apex of piercer as in Fig. 30c; spermathecae as in Fig. 30b.

Holotype ♂ (BPBM 13,342), allotype ♀ (BPBM), PAPUA NEW GUINEA: SE Central Prov, 20 km SE of Port Moresby, 1–6.II.1982, holotype swept from bushes, allotype swept from trees (J.W. Ismay). 6♂, 19♀ with following data: PAPUA NEW GUINEA: same loc. as type, 27.II–17.VII.1982–83; Central Prov, Rouna Falls, 7.VI.1980, edge of rain forest (R.A.I. Drew); Central Prov, Lomari Crk, nr Brown Riv, 17.II.1982 (Ismay). Series of paratypes in BPBM, other paratypes in DPIK, ANIC, and UH.

Other specimens examined. 31 teneral specimens: PAPUA NEW GUINEA: 6, same loc. and collector as holotype, 17.VII.1982, reared from fruits of *Ficus hispidooides*; 25, Central Prov, Crystal Rapids, 13.II.1978, "ex plant (2) coll. Ento. Staff."

Etymology. The specific epithet combines the Latin *sub*, "under, somewhat less than," with *pullatum*.

Clusiosoma (Clusiosoma) vittiferum (Walker)

Psila vittifera Walker, 1865, J. Proc. Linn. Soc. Lond., Zool. 8: 126. Type-locality: "New Guinea." Type ♂ in BMNH.

Diagnosis. This species fits close to *C. pleurale* but differs by having only the apex of the 2nd costal cell brown; by lacking a well-defined median vitta on the mesonotum; by having a complete brown band on the side of the mesonotum from above the humerus to the wing base; by having the sternopleuron mostly yellow with faint, interrupted brown markings; and by having a row of distinct anteroventral bristles on male front femur.

Known only from the type: yellow except for broad brown median portion of mesonotum continuous with small basal mark of brown on scutellum, divided on side of anterior portion above humerus, narrow arm of brown across notopleuron to wing base; complete narrow, longitudinal, brown band from propleuron across middle of mesopleuron to front margin of meta-pleuron; mesosternum and anterodorsal margin of sternopleuron brown, faint indication of brown at upper median portion of sternopleuron; abdomen mostly brown, tinged rufous. Bristling of posteroventral surface of ♂ front femur similar to most *Clusiosoma*, anteroventral row intermediate between *C. laterale* and *C. centrale* (Fig. 19b, 22b), length of bristles equal or slightly greater than width of tibia. Basal extension of brown coloring of wing extending diagonally from apex of 2nd costal cell to posterior margin near apical 1/3 of cell M₄.

Lengths: body 4.0 mm; wing 3.6 mm.

Distribution. New Guinea.

Specimens examined. Holotype ♂.

Paraclusiosoma Hardy, new subgenus

Type of subgenus: *Clusiosoma (Paraclusiosoma) papuaense*, n. sp.

The specimens examined possess all characters of *Clusiosoma* except those of the male front legs. These specimens are such a complete departure from those of typical *Clusiosoma* that I prefer to treat them in a distinct subgenus. The subgenus differs from typical *Clusiosoma* by the male front femur having a prominent basoventral tubercle bearing a cluster of black bristles and spinules at apex (Fig. 31a), otherwise the femur is devoid of ventral bristles. Also, the front tibia lacks the row of dense pile along the ventral surface and the fleshy lobe at apex is less developed. Otherwise fitting *Clusiosoma*.

Etymology. The epithet combines the Greek word *para*, "beside" or "near," with *Clusiosoma*.

Clusiosoma (Paraclusiosoma) papuaense Hardy, new species

Fig. 31

Diagnosis. This species can be readily differentiated from other *Clusiosoma* by the subgeneric characters noted above; by the all black interfacial area with yellow parafacials in both sexes; by having the basal 1/3 of the wing mostly subhyaline, with a brown mark through basal cells R and M; and by the entirely black mesonotum.

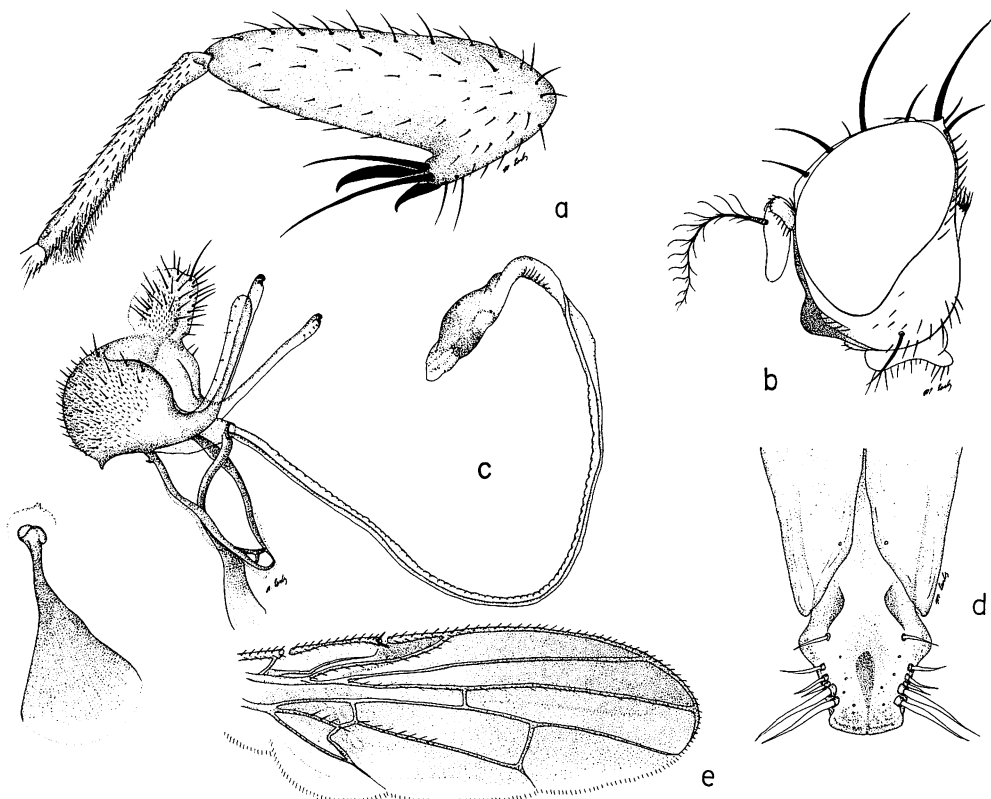


FIG. 31. *Clusiosoma* (*Paraclusiosoma*) *papuaense*: a, ♂ front leg, posterior view; b, head; c, ♂ genitalia; d, ♀ apex of piercer; e, wing.

♂. *Head*. As in Fig. 31b, face very gently concave on lower 1/3. Mostly pale yellow, shining black upper 1/3 of occiput, brown to black median streak on front, interfacial area black; clypeus, palpus and mouthparts entirely pale yellow. Upper superior fronto-orbital bristles equal to postocellars. Ocellars setalike, ca. equal in length but thinner than occipital setae. Arista with rather long dorsal plumes, sparsely placed ventral plumes, row of short hairs along inner surface. *Thorax*. Chaetotaxy as in other *Clusiosoma*, dorsocentral bristles slightly basad of line between supraalars. Mesonotum entirely subshining black, faint tinge of yellow to rufous at suture, posterolateral corners yellow. Scutellum mostly black, yellow on narrow margin and venter. Postscutellum and metanotum subshining dark brown to black. Humerus pale yellow, color continuous along upper edge of mesopleuron to wing base. Moderately broad black vitta through median portion of mesopleuron, continuous across ptero- and propleuron and lower lobe of cervical sclerite. Sternopleuron yellow, dark brown to black on anterior margin and continuing across mesosternum. Prosternum yellow. *Legs*. Yellow. Front leg as for genus and as in Fig. 31a. Other features fitting those of all *Clusiosoma*. *Wing*. Mostly brown with costal cell subhyaline, median portion, basad of r-m crossvein, slightly infuscated, broad brown coloring extending along vein M_{3+4} , continuous through basal portions of cells R and M. Posterior margin narrowly hyaline to apex of vein M_{1+2} (Fig. 31e). Vein M_{3+4} setose ca. halfway to m crossvein. *Abdomen*. Mostly black, yellow on side of 1st 3 terga. Male genitalia as in Fig. 31c.

Lengths: body and wing each 3.3–3.5 mm.

♀. Face yellow on oral margin, abdomen mostly yellow to rufous, tinged brown down median portions of terga, 1st tergum and median portions of 2nd and 3rd broadly dark brown to black. Basal segment of ovipositor black, ca. equal in length to terga 3–6. Apex of piercer as in Fig. 31d. Otherwise as in ♂ except for secondary sexual characters.

Holotype ♂ (BPBM 13,343), allotype ♀ (BPBM), PAPUA: NEW GUINEA: Central Prov, 23 km SE of Swikila, 7.II.1981, in rain forest (J.W. Ismay). 9♂, 3♀ paratypes, same data as type; Central Prov, 20 km SE of Port Moresby, 21.I–15.III.1982 & 27.II.1983, swept from bushes (Ismay); Morobe Prov, Wau, 1170 m, 11.IX.1981, in rain forest (Ismay).

Etymology. The specific epithet combines the Latin suffix *ensis*, which denotes place, locality, or country, with “Papua.”

Genus *Cribrorioxa* Hering

Cribrorioxa Hering, 1952, Verh. Naturforsch. Ges. Basel 63: 44. Type-species: *Cribrorioxa perforata* Hering, by original designation.

Hering allied this genus to *Rioxa* Walker and *Diarrhgmoides* Malloch, but it is much closer to *Neothemara* Malloch. It differs from *Neothemara* by lacking ocellar bristles; by having the inferior fronto-orbital bristles approximate on lower portion of front, with 4 flattened tephritine-like postvertical bristles (Fig. 32a); by having the head bristles all yellow except for the outer verticals, occipital row, and a strong bristle in vibrissal row; by having 2 prominent bristles in the vibrissal row; by having yellow bristles and hairs on the pleura and legs, except for a clump of black setae on the upper propleuron and 1 black apical spine on the mid tibia; by having the scutellum more elongate, ca. as long as wide, rather than 1/2 wider than long; and by having the subcostal vein rather strongly convex, as in *Rioxa*, and the lobe of cell Cu ca. equal in length to the vertical portion of vein Cu, rather than 2× longer. The wing markings are distinctive (Fig. 32b). It cannot be confused with any known Acanthonevrini.

Known only from the type-species.

Cribrorioxa perforata Hering

Fig. 32

Cribrorioxa perforata Hering, 1952, Verh. Naturforsch. Ges. Basel 63: 44. Type-locality: Waimangura, West Sumba. Type ♂ in NHMB.

Diagnosis. This species is readily differentiated by the generic characters given above.

The following description is based upon the male from Mao Marroe, Sumba in the MZB, augmented by color photographs I have of the type.

A nearly all-yellow species with narrow brown vittae on thorax; sides and apex of abdomen brown. Front in lateral view strongly sloped (ca. 70°), slightly longer than face. Face (in profile) vertical, raised into rounded keel down median portion. Clypeus prominent, slightly protruded beyond epistomal margin. Head yellow, ocellar triangle dark brown, pair of almost confluent brown to black spots on sides of lower face. Third antennal segment rather slender, ca. 2.5× longer than wide, slightly tapered at apex but broadly rounded, extending 3/4 length of face. Arista with rather long dorsal rays, ca. 8 moderately long ventral rays on apical 3/5, short ventral cilia at base, inner surface of arista with rather dense row of short erect hairs. Longest dorsal rays

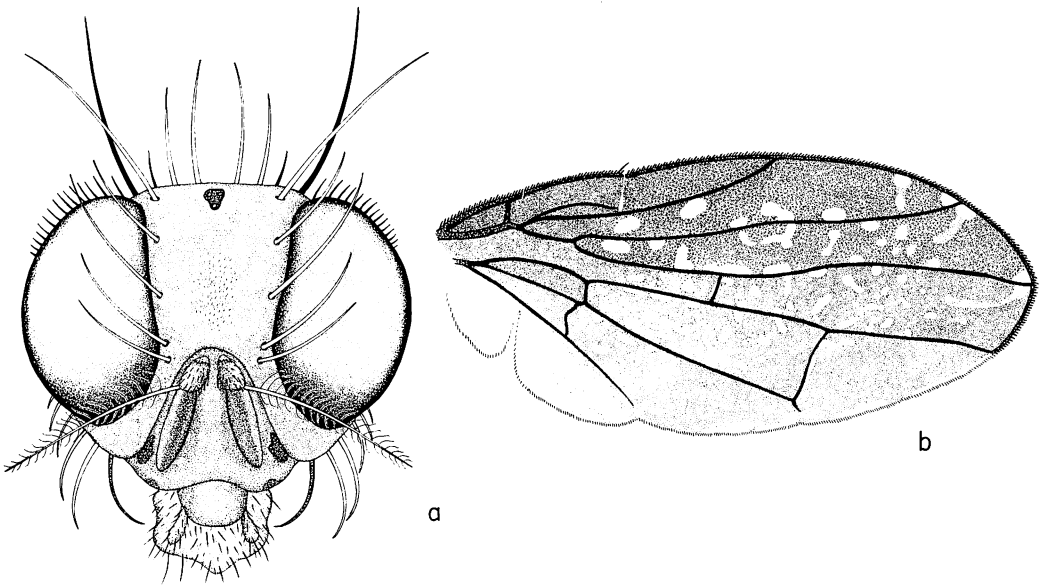


FIG. 32. *Cribrorioxa perforata*: a, head; b, wing.

slightly greater than width of 3rd antennal segment, longest ventral rays just slightly less than width of 3rd. Outer verticals, occipitals, and 1 prominent bristle in vibrissal row dark brown to black, black setae at apices of 1st and 2nd antennal segments, on lower hind portion of occiput, and on palpus; all other bristles and hairs of head yellow. Four prominent well-developed flattened postvertical bristles, 1 on each side of regular postverticals. Two superior and 2 inferior fronto-orbitals. Upper superiors slightly smaller than lower, latter near middle of front. Inferior fronto-orbitals near lower margin, upper stronger of 2, rather strongly reclinate. Vibrissal row with 2 rather prominent bristles, 1 dark colored, 1 yellow, plus series of fine yellow hairs (Fig. 32a). Thorax yellow except: 2 narrow vittae extending entire length of mesonotum at level with outer postalar, continuous on side of scutellum to apex; faint indication of brownish vitta on side from just beyond inner postalar to near suture; brown vitta on side from above humerus to about suture, at level with presutural bristles; brown vitta from underneath humerus across extreme top margin of mesopleuron to about wing base; 2 short streaks of brown extending horizontally through metapleuron. Metanotum tinged with brown on side. Scutellum rather elongate, more pointed than normal, ca. as long as wide. Apical scutellars strongest, $1/3-1/2$ longer than scutellum. Basal scutellars subequal to apical, secondary bristles smallest of 3 pairs, equaling ca. $2/3$ as long as apical pair. Prescutellar bristles strong, ca. equal in size to basal scutellars. Dorsocentrals opposite supraalars. Small secondary pair of supraalar bristles directly behind anterior bristles. Two pairs of mesopleural bristles and 1 pair of pteropleurals; sternopleurals well developed. Propleuron with clump of black setae on upper portion, yellow setae on lower portion. Wings mostly brown, small irregular subhyaline spots scattered through median portion (Fig. 32b). Subcostal vein rather strongly curved upward, very similar to *Rioxa*. Vein R_{1+2} ends in costa ca. opposite r-m crossvein, 3rd costal section ca. equal in length to 2nd. Vein R_{2+3} very slightly concave medially but straight throughout most of its course. Crossvein r-m at ca. apical $3/5$ of cell 1st M_2 . Lobe of cell Cu ca. equal in length to vertical portion of vein Cu. Only veins R_1 and R_{4+5} setose above, latter with setae along most of its length. Abdomen broadly

yellow through median portion of terga 1-4 and on extreme median base of 5, otherwise brown. Sterna yellow. Male genitalia and ♀ ovipositor not studied.

Lengths: The specimen examined measures 6.25 mm for both the body and wings. Hering, in the original description, measured the wing as 6.8 mm.

Distribution. Known only from the island of Sumba, Nusa Tenggara.

Specimens examined. Type series from Waimangura and Baing, Sumba and 1♂ from Mao Marroe. Hering had 3♂ and 1♀ in his original series from 2 localities on E and W Sumba and recorded (Hering 1952b) 1♂ from Mao Marroe. The latter specimen is in MZB.

Genus *Dacopsis* Hering

Dacopsis Hering, 1944, *Siruna Seva* 5: 2. Type-species: *Dacopsis dacina* Hering, 1944 [= synonym of *Seraca signata* Walker, 1860], by original designation.

Sophira: Malloch, 1939, *Proc. Linn. Soc. N.S.W.* 64: 430, and other authors (not Walker, 1856).

For treatment of the known species of *Dacopsis* from Indonesia, New Guinea, Bismarck Archipelago, and the Solomon Islands, refer to Hardy (1980: 150-156), in which the following species are keyed and described: *D. apicalis* Hardy, New Britain; *D. flava* (Edwards), New Guinea; *D. holoxantha* (Hering), Bismarck Archipelago and Sarawak; *D. mantissa* (Hering), Sumatra; *D. quadripunctata* Hardy, Solomon Islands; and *D. signata* (Walker), Sulawesi, Maluku, and the Philippines.

Additional notes on *D. flava* and *D. holoxantha* are given here.

Dacopsis flava (Edwards)

Rioxa flava Edwards, 1915, *Trans. Zool. Soc. Lond.* 20: 421. Type-locality: Mimika Riv, Irian Jaya. Type ♀ in BMNH.

Dacopsis picturata Hardy, 1980, *Pac. Insects* 22: 155. Type-locality: Kokoda, Papua New Guinea. Type ♂ in BMNH. *New synonymy.*

A remarkable case of sexual dimorphism exists in this species; the male has elaborate wing markings (Hardy 1980: 154, Fig. 19), the female wings are nearly all hyaline with a narrow band of brown along apical margin (Hardy 1980: 153, Fig. 17a).

Distribution. Widespread throughout the island of New Guinea.

Specimens examined. Type series of both taxa and 12 specimens with following data. PAPUA NEW GUINEA: Kerema, Brown Riv, 24.IV.1971 (Baldwin & Baker); Brown Riv nr Port Moresby, 4.X.1963 (D.K. McAlpine); Aroana Estate, Aroa Riv, 5.XII.1963 (McAlpine); Dea Estate, Aroa Riv, 5.XII.1963 (McAlpine); Laloki, 1910 (F. Muir); 20 km SE of Port Moresby, 6.II.1982 (J.W. Ismay); Kuminibus, nr Maprik, 17.XII.1963 (McAlpine); Morobe Prov, Kilolo Crk, 7 km W of Wau, 950 m [no date] (P. Coleman).

Biology. Reared from thick stringy green bark of newly felled *Dysoxylum* trees by Dr H. Roberts.

Dacopsis holoxantha (Hering)

Sophira holoxantha Hering, 1941, *Siruna Seva* 3: 21. Type-locality: Ralum, Bismarck Archipelago. Type ♀ in ZMHB.

Distribution. New Britain, New Ireland, Papua New Guinea, and Sarawak.

Specimens examined. SARAWAK: 4th Div. Niah, 3°49'N, 113°46'E, 9-17.X.1976 (P.S. Cranston) (BMNH).

Genus *Diarrhegma* Bezzi

Diarrhegma Bezzi, 1913, Mem. Indian Mus. 3: 108. Type-species: *Dacus modestus* Fabricius, 1805, by original designation.

This genus fits in the group of genera that have 2 strong apical spines on the middle tibia and 2 pairs of strong, well-spaced, inferior fronto-orbital bristles. It has 6 strong, almost equal-sized scutellar bristles and well-developed intrapostalars. It is readily differentiated from all known Acanthonevrini by a large white spot covering the hind portion of the mesonotum (Fig. 33b) and the scutellum, this area bare of setae.

The following characters are diagnostic: head narrow, nearly 2× higher than long; face vertical, dorsocentral bristles in line with supraalars; pteropleural strong; mesopleuron with 2-4 black bristlelike setae on lower median portion; wings predominantly dark brown with hyaline wedges from anterior and posterior margins and with a few hyaline spots in middle (Fig. 33c).

Two other species besides the type-species have been placed in this genus: *Diarrhegma unicolor* (Shiraki 1933: 303), from Taiwan, and *D. eburata* Zia (Zia 1963: 646), from Yunnan, China. The former is apparently an aberrant *Acanthonevra* near *incerta*, n. sp., and the latter appears to be a synonym of *D. modestum* (Fabricius), but I cannot confirm this since I have not seen specimens from Yunnan. I find no characters in the original description that will differentiate it from *modestum*.

Diarrhegma modestum (Fabricius)

Fig. 33

Dacus modestus Fabricius, 1805, Syst. Antliat., p. 278. Type-locality: W Bengal, India. Type ♂ in ZMUC.
Trypeta incisa Wiedemann, 1824, Analecta Entomol., p. 53. Type-locality: Bengal, India. Location of type ♀ not known.

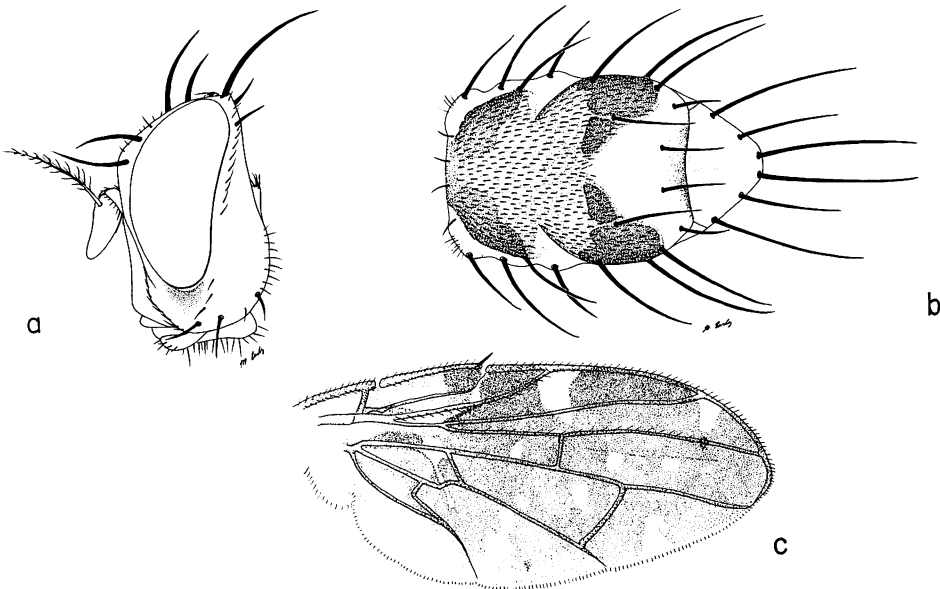


FIG. 33. *Diarrhegma modestum*: a, head; b, thorax, dorsal view; c, wing.

Tephritis paritii Doleschall, 1865, Natuurkd. Tijdschr. Ned.-Indië 10: 412. Type-locality: Amboina [Ambon], Maluku. Lectotype ♂ in TMB.

This species is readily recognized by the large ivory-colored spot on the back part of the thorax (Fig. 33b), by the wing markings (Fig. 33c), and by the head shape (Fig. 33a). It has been adequately described by Hardy (1973: 97).

Distribution. Widespread throughout the Oriental Region: known throughout India, the Philippines, SE Asia, and Indonesia.

Specimens examined. Ca. 100 specimens from throughout the range of the species, including specimens from a number of localities on Java, the island of Borneo, Maluku, and Nusa Tenggara.

Biology. In India this species has been recorded as breeding in decaying wood.

Genus *Diarrhegmoides* Malloch

Diarrhegmoides Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 437. Type-species: *Diarrhegmoides hastatum* Malloch, 1939, by original designation.

This genus fits in the group of genera that have only veins R_1 and R_{4+5} setulose, only 1 strong spur at the apex of the middle tibia, the secondary scutellars smaller than the apical pair, the costal spine strong, the intrapostalar bristles lacking, and sternopleural and pteropleural bristles present. It fits in a complex of genera that have the head higher than long; the face vertical (Fig. 34c) with rather conspicuous black vibrissae; vein R_{4+5} rather strongly convex beyond the r-m crossvein; M_{1+2} gently convex beyond M; the pteropleural bristles large, stronger than mesopleurals or sternopleurals; and the female ovipositor as in Fig. 34a. There are 4 pairs of nearly equal-sized preapical setae on each side of the ovipositor. It fits nearest *Phasca* Hering but differs from it by having 2 rows of hairs on the dorsal margin of the arista, the ventral surface bare; the dorsocentral bristles in front of the anterior supraalars; and intrapostalar bristles lacking. The wings are largely brown with a large hyaline wedge in the middle of anterior margin and 3 transverse streaks through the posteroapical portion (Fig. 34b).

Only 1 species is presently recognized. Three Australian species have been assigned to the genus by Hering in his unpublished checklist in my file: *Rioxa araucariae* Tryon and *Diarrhegmoides bicalcaratus* Hering, which Dr D.K. McAlpine (in litt.) has placed in a new genus (manuscript in prep.) and *Acanthonevra acidomorpha* Hendel, which McAlpine has placed in a 2nd new genus along with *Acanthonevra australina* Hendel.

Diarrhegmoides hastatum Malloch

Fig. 34

Diarrhegmoides hastata Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 437. Type-locality: Edie Creek, Papua New Guinea. Type ♂ in CIHS.

Diagnosis. This is a comparatively small species readily characterized by the generic characters given above and by distinctive wing markings (Fig. 34b).

Head (Fig. 34c) mostly pale yellow to white. Median portion of front tinged with brown, brown tinge on sides of lower face and upper gena below eye margin, dark brown streak extending full length down each side of occiput in line with vertical bristles, sides of clypeus dark brown to black. Third antennal segment broad, rounded at apices, ca. 1/2 longer than wide, extending ca. 2/3 length of face. Two dorsal rows of hairs on arista moderately long, longest

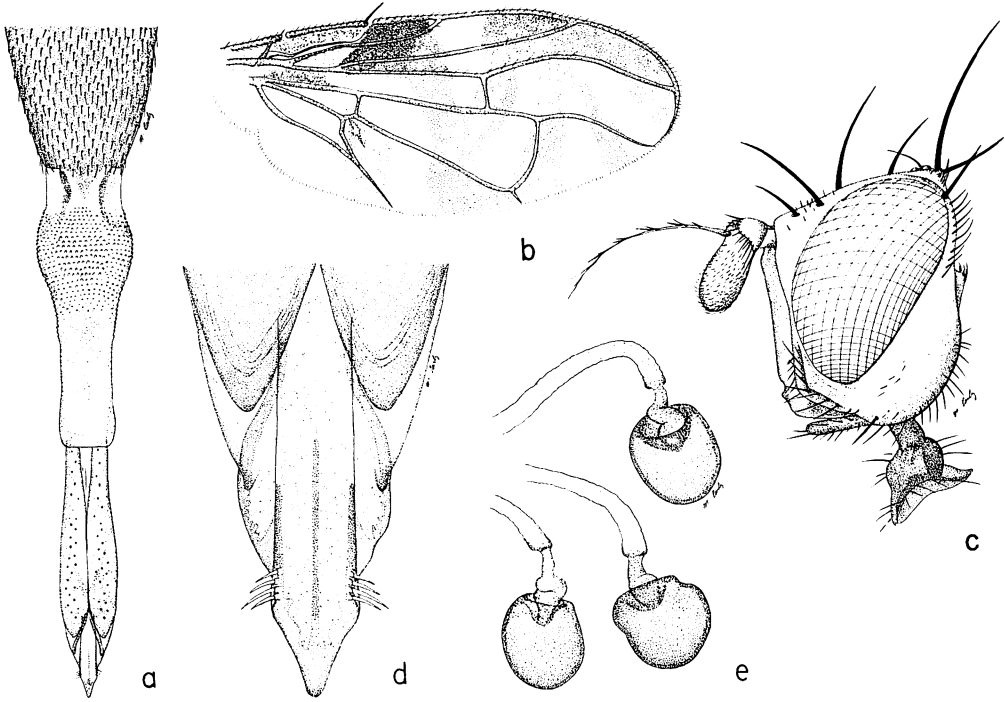


FIG. 34. *Diarrhgmoides hastatum*: a, ♀ ovipositor; b, wing; c, head; d, ♀ apex of piercer; e, ♀ spermathecae.

hairs almost equal to width of 3rd segment. Vibrissal row moderately developed, consisting of conspicuous black bristlelike hairs, ca. equal in size to occipital row. Two pairs each of inferior and superior fronto-orbitals (Fig. 34c). Ocellar bristles moderately developed, subequal to upper superior fronto-orbitals. Thorax mostly black or dark reddish brown, lightly gray-dusted on mesonotum, with 3 complete pale yellow to white longitudinal vittae, middle vitta sometimes obscured by gray pollinosity. Pleuron with broad, pale yellow to white vitta from propleuron across mesopleuron and upper portion of pteropleuron to wing base. Remainder of pleura dark brown to black, tinged yellow to rufous. Bristles of thorax as noted above, secondary scutellars ca. 2/5 as long as apical pair. Legs yellow except for a tinge of brown on mid and hind femora. Wing mostly brown, brown along anterior margin, hyaline wedge from costa through cell R_1 extending through R_3 and R_5 to vein M_{1+2} just before r-m crossvein. Posterior portion of wing with 3 transverse, hyaline streaks in preapical portion, 1 from apex of vein M_{1+2} through cell R_5 to vein R_{4+5} , 1 from margin through middle of cell 2nd M_2 to vein M_{1+2} , and 1 extending from vein M_{3+4} through cell 1st M_2 just before m crossvein and through cell R_5 to vein R_{4+5} . Costal spine equal or longer than length of upcurved portion of vein Sc. Third costal section ca. 2/3 as long as 2nd. Vein R_{2+3} nearly straight, slightly upcurved at apex. Veins R_{4+5} and M_{1+2} convex on apical portions. Crossvein r-m near apical 3/4 of cell 1st M_2 , lobe of cell Cu comparatively short, ca. 1/2 as long as vein Cu_{1+1stA} (Fig. 34b). Abdomen shining dark reddish brown to black. I find no distinctive features in ♂ genitalia. Basal segment of ♀ ovipositor dark brown to blackish, 2× longer than wide, slightly longer than combined lengths of terga 2-6. Piercer rather broad, tapered to a sharp point at apex, 4 nearly equal sized preapical setae on side (Fig. 34d). With 3 mushroom-shaped spermathecae (Fig. 34e).

Lengths: body 3.5–4.0 mm; wing 4.0–4.3 mm.

Distribution. Widespread in Papua New Guinea and probably throughout the entire island of New Guinea.

Specimens examined. Ca. 75 specimens from numerous localities in Papua New Guinea.

Genus *Enoplopteron* de Meijere

Enoplopteron de Meijere, 1915, Tijdschr. Entomol. 58: 127. Type-species: *Enoplopteron hieroglyphicum* de Meijere, by monotypy.

This is a very distinctive genus, showing a relationship to *Themaroides* Hendel and *Themarohystrix* Hendel because of 2 long spurs on the middle tibia, the shape of the head, the bristle arrangement, the setose scutellum, and the presence of strong intrapostalar, secondary supraalar, and pteropleural bristles. It is readily differentiated from all known Tephritidae from this region by having strong spines along the costal margin of the wing and distinctive wing markings (Fig. 35d, 36, 37c). For other details refer to the descriptions of species.

KEY TO KNOWN SPECIES OF *ENOPLOPTERON*

1. Wing not with a complete broad brown border around margin (Fig. 36, 37c) 2
Wing margin broadly dark brown (Fig. 35d) **hieroglyphicum**
2. With eyelike spots in cell *Rs*, before and after r-m crossvein; wing lacking hyaline marks on margin or a reticulation of brown marks through field (Fig. 36); no distinct median vitta on mesonotum, small brown spot present on side of mesonotum inside intrapostalar bristle; scutellum with pair of small, brown, preapical spots **occulatum, n. sp.**
Wing lacking such spots, some hyaline marks on margin and entire submarginal portion reticulate (Fig. 37c); mesonotum with complete narrow black median vitta, pair of large black marks inside and above inner postalar bristles; pair of large black marks in middle of scutellum (Fig. 37b) **reticulatum, n. sp.**

Enoplopteron hieroglyphicum de Meijere

Fig. 35

Enoplopteron hieroglyphicum de Meijere, 1915, Tijdschr. Entomol. 58: 127. Type-locality: "Hoofdbivak am Kaiserin Augusta-Fluss," Papua New Guinea. Type ♂ in ZMUA.

Diagnosis. This species differs from *E. occulatum*, n. sp., by lacking eyelike spots in wing, by having a dark brown band around the margin, and by being subhyaline with numerous irregular streaks in the central portion (Fig. 35d). There are 10 black spots plus a narrow median vitta present on the mesonotum; 2 large black spots on the scutellum, and 6–7 spots on the pleura.

Head higher than long, eyes oblong, 2× higher than long, front sloping, face gently convex in middle (in lateral view). Pale yellow, faint tinge of brown on gena just below eye margin. Two pairs each of strong superior and inferior fronto-orbitals, former above middle and latter close together near lower margin of front, upper inferior fronto-orbitals reclinate, lower cruciate. Ocellar bristles setalike. Arista moderately long plumose, row of prominent hairs on inner margin. Face raised medially, narrowed into slender keel on upper portion between antennae. Antenna

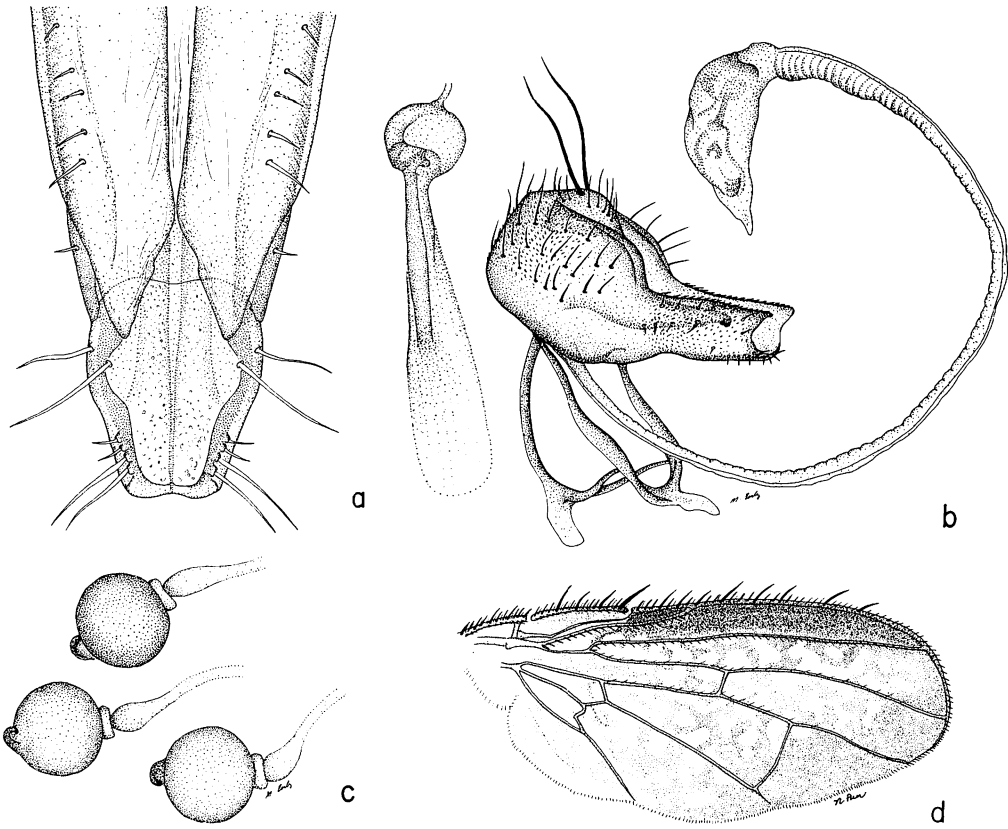


FIG. 35. *Enoplopteron hieroglyphicum*: a, ♀ apex of piercer; b, ♂ genitalia; c, ♀ spermathecae; d, wing.

near upper 3/5 of head, about 2/5 length of face. Thorax pale yellow with conspicuous black spots and median longitudinal vitta as noted above, those on dorsum arranged as in *E. reticulatum*, n. sp. Dorsocentral bristles opposite secondary pair of supraalars. Pleura with small black spot at lower edge of humerus, 1 at lower hind margin of propleuron, 2 in median portion of mesopleuron, 1 on upper anterior portion of sternopleuron, and 2 on pteropleuron. Single black median spot on metanotum. Middle tibia with 2 large, subequal apical spines. Posterodorsal row of bristles on middle tibia and 2 anteroventral bristles near middle of hind tibia rather strong, ca. equal in size to posterodorsal bristles of front femur. Wing with 12-14 strong bristles along anterior margin from just beyond humerus to beyond level with m crossvein, uniquely patterned as in Fig. 35d. Veins R_1 , R_{2+3} , R_{4+5} , and M_{1+2} black setose above. Crossvein r-m near apical 3/5 of cell 1st M_2 , lobe of cell Cu ca. 1/4 as long as vein Cu_{1+1stA} . Abdomen mostly pale yellow, ♀ with 3 black spots each on anteromedian margins of terga 3 and 4 plus tiny inconspicuous spot on lateral margin (lacking in ♂); 5th tergum with complete broad black basal band in ♂, narrower sometimes interrupted band in ♀. Sixth tergum of ♀ all yellow. Basal segment of ovipositor black, scarcely longer than wide and ca. equal in length to terga 4-5. Male cercus very short, scarcely extending beyond edges of epandrium. Male genitalia as in Fig. 35b. Female piercer rather short, truncate at apex, shaped as in Fig. 35a. Three spermathecae as in Fig. 35c.

Lengths: body and wing each 7.0–8.0 mm.

Distribution. Apparently widespread throughout the island of New Guinea.

Specimens examined. Holotype ♂. Ca. 60 specimens with following data. PAPUA NEW GUINEA: Bai-nyik, 17–21.XII.1963 (D.K. McAlpine); Northern Prov, Asila, 27.IX.1966 (B. Keara); Morobe Prov, Gamiph, 30.XI.1972, on sugarcane (K. Gorea); Morobe Prov, Bubia, 17.XI.1972 (G.A. Holloway); Huon Penin, Boana Mission, 900 m, 4–5.IX.1956 (E.J. Ford Jr); Salawaket Range, Baidoang, 1800 m, 15.IX.1956 (Ford Jr); Sepik Riv, Kandanggai, 29.II.1964 (D.H. Colless); Wau, 1250 m, 3.VIII.1964 to 14.III.1966 (J. Sedlacek & J.L. Gressitt); Central Prov, Morequina, 23.VII.1982 (J.W. Ismay); Kokoda-Pitoki, 400 m, 23.III.1956 (Gressitt); Central Distr, Mori Riv, 15 mi [24 km] NE of Cape Rodney, VIII.1969 (R. Pullen). IRIAN JAYA: Genjam, 40 km W of Hollandia, 100–200 m, 1–10.III.1960 (T.C. Maa); Waris, S of Hollandia, 450–500 m, 1–7.VIII.1959 (Maa).

Enoplopteron oculatum Hardy, new species

Fig. 36

Diagnosis. This species can be readily differentiated from *E. hieroglyphicum* by the very different wing markings, lack of a brown border around margin, presence of a series of eyelike marks through middle (Fig. 36), and lack of setae on vein R_{2+3} ; also it has only a faint indication of a pale brownish median vitta on the mesonotum, no distinct mark on the scutellum, only 2 black marks on the pleura, and an entirely yellow metanotum.

♀. Yellow except black spots on thorax. Fits description of *E. hieroglyphicum* except as noted above. Scutellum broadly setose on side, bare on posteromedian portion, small faint brown streak above apical bristle, with 6 strong marginal bristles. Only mesopleural spots present on pleura. Base of ovipositor yellow to rufous, faintly tinged at apex. Piercer not extruded for study, blunt at apex with 2 prominent preapical setae on side.

♂. As ♀ except sides of terga 4–5 brown. Genitalia not relaxed for study.

Lengths: body 8.0 mm; wing 9.0 mm.

Holotype ♀, allotype ♂, PAPUA NEW GUINEA: upper Manki logging area, nr Bulolo, 5.I.1972 & 16.III.1973, in sticky trap (F.R. Wylie & P. Shanahan) (AMS).

Etymology. The name is from the Latin *occulatus*, “having little eyes” or “marked with spots,” and refers to the eyelike spots in the wing.

Enoplopteron reticulatum Hardy, new species

Fig. 37

Diagnosis. This species is closely related to *E. hieroglyphicum*. It can be differentiated by the distinctive wing markings (Fig. 35d, 37c) and a brown border, which is

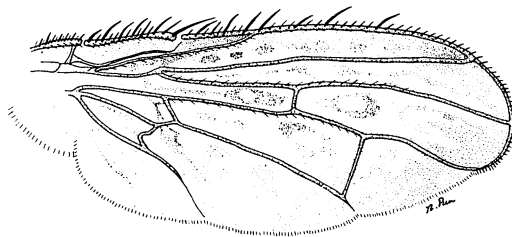


FIG. 36. *Enoplopteron oculatum*, wing.

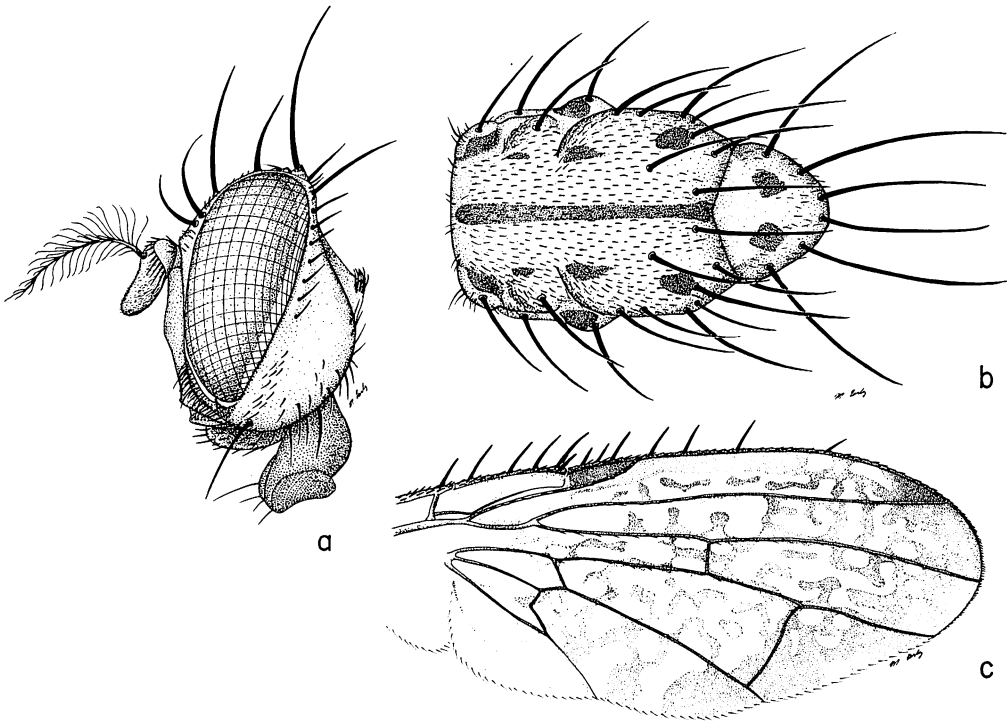


FIG. 37. *Enoplopteron reticulatum*: a, head; b, thorax, dorsal view; c, wing.

comparatively narrow and disrupted by hyaline marks in cell R_1 , 2 marks in 2nd M_2 , and 2 in M_4 . The field of the wing is subhyaline rather than pale yellowish, and more elaborately reticulate. The black mark on the side of the hind portion of the mesonotum anterior to the intrapostalar and inner postalar bristles is larger, extending nearly to a level with the dorsocentral bristles (Fig. 37b). The black postnotal mark is longer than wide. Tergum 1 of the abdomen has a large black mark covering all of the median portion and tergum 3 is mostly black on the hind margin with a line of black on each side and a black spot in the middle. In *E. reticulatum*, tergum 4 is mostly black on the basal margin in the male and has 5 small spots in the female.

Except for differences noted above, fits description of *E. hieroglyphicum*. Head as in Fig. 37a, dorsum of thorax as in Fig. 37b. Terminalia have not been studied for either sex.

Lengths: body and wing of ♂ each 7.0 mm; of ♀ each 8.25 mm.

Holotype ♂ (BPBM 13,344), allotype ♀ (BPBM), PAPUA NEW GUINEA: Robbies Crk, nr Bulolo, on *Bambusa*, 26.VI.1979 (H. Roberts).

Etymology. The species name is from the Latin *reticulatus*, "netlike, netted"; it refers to the pattern of brown marks on the wing.

Gressittidium Hardy, new genus

Type of genus: *Gressittidium flavicoxa*, n. sp.

Diagnosis. This genus fits in the complex of genera that have only veins R_1 and R_{4+5} setose above; only 1 strong spur at the apex of the middle tibia; the secondary scutellars smaller than the apical pair; the intrapostalar bristles lacking; the head higher than long; the face vertical in profile (Fig. 38a); and the wing brown with hyaline wedges on the margin (Fig. 38c). It resembles *Diarrhegmoides* Malloch but differs by having veins R_{4+5} and M_{1+2} gently convex; the arista long plumose; the antennae short, ca. $1/3$ as long as face; the palpus of both sexes densely bristled; both sexes with long, slender, posteroventral bristles on the front femur; 2 long anteroventral and 1 posteroventral on the hind femur; the mesonotum densely setose; the dorsocentral bristles halfway between the supraalars and the postalars; the propleuron narrow, scarcely over $1/2$ the length of the front coxa and scarcely $2\times$ wider than the length of the spiracle (Fig. 38a); the costal spines small, about $2\times$ larger than the costal setae; the basal segment of the ovipositor ca. equal in length to terga 4+5; and the piercer slender.

Head nearly quadrate in shape, slightly pointed at insertion of antenna, front horizontal, antenna at upper $1/3$ - $1/4$ of head height (Fig. 38a). Two pairs of widely spaced superior fronto-orbital bristles, lower at lower $3/5$ of front, 2 pairs closely placed inferior fronto-orbitals at lower margin of front. Interfrontal area covered with short black setae. Ocellar bristles rather small, ca. $1/2$ as long as postocellars. Thorax with full complement of bristles except lacking intrapostalar. Long anteroventral bristles of front femur extending full length of segment, basal bristle pale-colored, considerably longer than others, ca. equal to $1/2$ length of femur. Hind femur with 1 anteroventral bristle at middle, 1 at base, 1 long posteroventral bristle at middle. Wing as in Fig. 38c and as described for species below.

Etymology. This genus is named in honor of the late Dr J.L. Gressitt, who has contributed more to our understanding of the insect fauna of New Guinea than any other person. His name has been combined with the Latin diminutive *idium*. The gender is neuter.

Gressittidium flavicoxa Hardy, new species

Fig. 38

Diagnosis. This species can be readily differentiated from all known Tephritidae by the generic characters given above.

♂. *Head.* As for genus and as in Fig. 38a. Arista with moderately long dorsal and ventral hairs, row of short hairs along inner margin. Third antennal segment slightly longer than wide. Upper median portion of occiput pale yellow, color continuous as broad yellow vitta down side of front in area occupied by frontal bristles. Black triangular mark on upper median portion of occiput between postocellar bristles, extending across ocellar triangle and continuous as broad brown vitta down middle of front. Face shining black, gray pubescent in antennal furrows, thin line of yellow along orbital margin. Median portion of face flattened on lower $2/3$ (in front view), upper $1/3$ narrowed into sharp carina extending to bases of antennae. Clypeus entirely black, mentum dark reddish brown, tinged blackish. Palpus yellow, tinged with brown, numerous short spines at apices and along posterior margins (Fig. 38a). Occiput with broad triangular-shaped black mark on side in area of outer vertical bristles, continuous across posteroventral margin in area of supracerical setae. Median portion of occiput broadly yellow, posteroventral portion black, connecting with broad black mark extending across gena. *Thorax.* Largely shining black, lightly

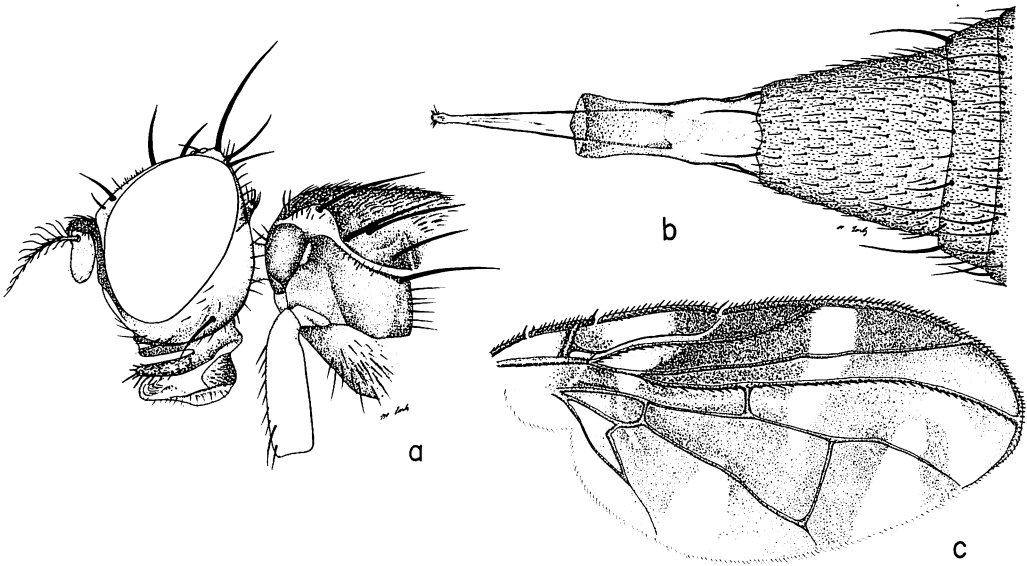


FIG. 38. *Gressittidium flavicoxa*: a, head and anterior portion of thorax; b, ♀ ovipositor; c, wing.

grayish pubescent, anteromedian margin pale yellow and yellow down middle of mesonotum in area bordered by prescutellar bristles, becoming white beyond suture; narrow yellow vitta on side continuous to about dorsocentral bristles; humerus pale yellow to ivory-colored, continuous narrow pale vitta along upper margin of mesonotum to wing base. Halter pale ivory-white. Secondary scutellars ca. $1/2$ as long as apical bristles. *Legs*. Dark brown to blackish except for conspicuously contrasting pale yellow to ivory-white coxae and trochanters, tarsi and front and middle tibiae yellow, tinged faintly with brown. Bristles as noted above. *Wing*. Largely brown with hyaline wedge from middle of 2nd costal section to vein M; large wedge from margin in cell R_1 just beyond apex of vein R_1 to just below vein M_{3+4} ; wedge extending from margin at lower apex of cell R_5 to vein R_{4+5} ; another in middle of cell 2nd M_2 extending into upper portion of cell R_5 , another in cell M_4 extending to M_{3+4} (Fig. 38c). Vein R_{2+3} straight. Crossvein r-m near middle of cell 1st M_2 , lobe at apex of Cu nearly $2\times$ longer than upcurved portion of vein Cu. *Abdomen*. First tergum and basal portion of 2nd, also 1st 2 sterna, entirely pale yellow to ivory-white. Remainder of abdomen shining black except for pale posterior margin along median portion of 2nd tergum. Male genitalia not dissected for study. Epandrium and surstylus black, latter short and blunt at apex. Cercus short, ca. equal in length to epandrium.

Lengths: body 4.4 mm; wing 4.0 mm.

♀. As in ♂. Basal segment of ovipositor comparatively short, ca. equal in length to terga 4+5. Ovipositor base equal in length to terga 4-6. Piercer (Fig. 38b) lanceolate. Spermathecae round, 2 large and 1 small.

Holotype ♂, PAPUA NEW GUINEA: lower Sepik Riv, X.1959 (R. Pullen). Allotype ♀ (BPBM 13,345a), IRIAN JAYA: Japen I: Dawai Riv, SSE Sumberbaba, 28.X.1962, in jungle (H. Holtmann). 1♂ paratype, same data as holotype; 1♀ paratype, PAPUA NEW GUINEA: Central Prov, Lomari Crk, 20.III.1982 (J.W. Ismay). Holotype deposited in ANIC, allotype in BPBM, paratypes in DPIK and UH.

Etymology. The specific epithet combines the Latin *flavus*, "yellow," with "coxa," and refers to the pale yellow coxae. The name is used as a noun in apposition.

Hemiclusiosoma Hardy, new genus

Type of genus: *Hemiclusiosoma trivittatum*, n. sp.

Modification of the front legs and genitalia of the male and the wing markings are the same as *Clusiosoma* Malloch. *Hemiclusiosoma* differs by having the face vertical and vein M_{3+4} bare. Also, the secondary scutellar bristles are smaller, scarcely $1/2$ as long as the basal bristles and the secondary spur of the mid tibia is short, ca. $1/4$ as long as the strong spur. Otherwise as *Clusiosoma* but differentiated from all known species of that genus by the characteristic markings of the mesonotum in combination with the black mark in the middle of the face. It has strong intrapostalars and lacks pteropleural bristles.

Etymology. The generic epithet combines the Greek *hemi*, "half," with *Clusiosoma*. It refers to the close relationship of this new taxon with *Clusiosoma*. The gender is neuter.

Hemiclusiosoma trivittatum Hardy, new species

Diagnosis. This species can be readily differentiated by the generic characters given above.

♂. *Head.* Mostly yellow, small black mark on ocellar triangle, upper occiput brown to black, prominent black spot in middle of face, sides of clypeus tinged with brown. Other head characters as in species of *Trypanocentra* Hendel, face raised along median portion, straight up and down as seen in lateral view. Third antennal segment ca. $2\times$ as long as wide, ca. $3/5$ length of face. *Thorax.* Yellow, prominent black mark on side of mesonotum from anterior margin above humerus extending as broad submedian vitta entire length, confluent on posterior margin; continuation of this mark extends along sides of mesonotum from above humerus to wing base, covering area of presutural bristle and notopleuron. Scutellum dark brown, tinged with rufous on dorsum, yellow on margin and venter. Pleura with brown vitta from mesopleural spiracle to pteropleuron. Anterodorsal portion of sternopleuron covered by brown to black mark. *Legs.* Yellow. Fitting characteristics of *Clusiosoma* except inner spine on mid tibia short, scarcely over $1/4$ as long as large spine. Femur rather strongly swollen, 2 irregular rows of prominent bristles along posteroventral margins, no bristles on anteroventral margin. Padlike process at apex of front tibia as in *Clusiosoma*, although on specimen at hand posterior margin of pad lacks fringe of long curled hairs. *Wing.* Fits characteristics of *Clusiosoma* except for bare M_{3+4} . Brown in most of apical $2/3$, subhyaline, lightly tinged with brown in costal cells and in basal and posterior areas. Crossvein r-m at middle of cell 1st M_2 , Cu with 3 prominent black setae above, just before apex of straight basal portion. *Abdomen.* First 3 segments yellow, tinge of brown on median portion of 1st tergum, brown-tinged on side of 3rd. Fourth and 5th terga shining black on side, reddish brown down median portion. Genitalia not dissected for study. Surstylus and lobe of 10th sternum clearly visible in situ, long and slender, typical of *Clusiosoma*.

Lengths: body and wing each 4.0–4.25 mm.

♀. Unknown.

Holotype ♂, PAPUA NEW GUINEA: Morobe Prov, Wau, 1250 m, 21.I.1963 (J. Sedlacek) (BPBM 13,346).

Etymology. The species name combines the Latin words *tri*, "3," and *vitta*, "band, stripe," and refers to the 3 vittae on the mesonotum.

Heringomyia Hardy, new genus

Type of genus: *Acanthoneura longiplaga* Hering.

When Hering described *Acanthoneura longiplaga*, he stated that the species probably represented a new genus, but because it was based upon only 1 specimen he chose not to describe it as such. The species does not fit the present concept of *Acanthoneura* and it is necessary to erect a new genus. It differs from *Acanthoneura* by having only 1 pair of superior fronto-orbital bristles and by having dorsocentral bristles posterior in position, near the prescutellars. Otherwise it fits the characteristics of *Acanthoneura*. By having only 2 pairs of orbital bristles it seems to fit near *Termitorioxa* Hendel but differs by having vein R_{2+3} undulate and the m crossvein bowed outwardly, bases of the antennae close together, face concave in profile, and the wings marked differently (Fig. 39).

Etymology. The genus is named after Dr Martin Hering by combining his name with the Greek *myio*, "fly."

Heringomyia longiplaga (Hering), new combination

Fig. 39

Acanthoneura longiplaga Hering, 1939, Verh. VII Int. Kongr. Entomol. 1938, 1: 174. Type-locality: Amboina [Ambon], Maluku. Type ♂ in NHMV.

Diagnosis. Differs by the generic characters given above.

Head and thorax mostly yellow to rufous. Two narrow black vittae down middle of mesonotum in line with dorsocentral bristles. Scutellum blackish, paler in middle, metanotum black on side. Only 1 inferior fronto-orbital and 1 superior fronto-orbital present. Arista moderately long plumose. Legs yellow. One long spine at apex of middle tibia. Wing mostly dark brown with large hyaline wedge from anterior margin through cell R_1 , extending through R_3 and R_5 , covering r-m crossvein. With hyaline wedge at upper apex of cell 2nd M_2 extending across preapical portion of cell R_5 to vein R_{4+5} , oblique hyaline streak through apical portion of 1st M_2 from vein M_{3+4} across cell R_5 to vein R_{4+5} . Irregular broad hyaline band from costal margin at middle of 2nd costal cell through bases of cells M_2 and M_4 (Fig. 39). Third costal section subequal to 2nd. Vein R_{2+3} undulate. Crossvein r-m near apical 2/3 of cell 1st M_2 , lobe of cell Cu ca. 1/3 as long as Cu_{1+1stA} . Abdomen yellow down median portion, broadly black on sides of terga 2-4, 5th tergum mostly black.

Length: wing 8.0 mm.

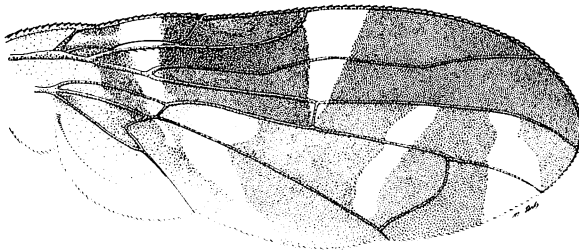


FIG. 39. *Heringomyia longiplaga*, wing.

Distribution. Maluku.

Specimens examined. Holotype ♂.

Genus *Hexacinia* Hendel

Hexacinia Hendel, 1914, Wien. Entomol. Ztg. 33: 82; 1915, Ann. Hist.-Nat. Mus. Natl. Hung. 13: 459.
Type-species: *Acinia stellata* Macquart, 1851 [= *Acinia radiosa* Rondani 1868], by original designation.

This genus differs from other Acanthonevrini by having a well-developed mesopleural bristle near the lower median margin; the wings broad, *Platensina*-like, ca. 2× longer than wide and predominantly brown with small hyaline or subhyaline spots around the margin and in field (Fig. 40b); the head with several upcurved bristles on the lower margin of the gena; most bristles of the head and thorax brownish yellow; and the supracervical setae black.

Predominantly yellow species with indistinct to prominent brown to black spots on side of mesonotum, scutellum, pleura, sides of face, and abdomen. Head (Fig. 40c) with 2 pairs inferior fronto-orbital bristles close together on lower 1/3 of front, 2 pairs superior fronto-orbitals on upper 1/2. Ocellar bristles small, subequal in length, much thinner than occipital setae. Outer verticals and occipital setae dark brown to black. Inner verticals, postocellar, and upper inferior fronto-orbitals pale yellow, other head bristles yellow tinged with brown. Interfrontal area covered with short erect yellow-brown setae. Antenna in middle of head. Arista moderately long plumose, row of short hairs on inner margin. Face slightly raised in median portion, vertical in lateral view. Scutellum bare, with 6 marginal bristles, secondaries small, ca. 2/5-1/2 as long as apical bristles. Thorax with full complement of bristles except intrapostalars small, scarcely differentiated from surrounding setae. Dorsocentrals in line with supraalars. Extra bristle on lower median portion of mesopleuron ca. equal in size to lower of 2 bristles on hindmargin of mesopleuron. One strong pteropleural. Propleuron with 5 or 6 bristlelike black setae on anterior margin. Legs yellow, small ventral spot of brown at apical 2/3 of mid and hind femora. Front femur with ca. 6 moderate posteroventral bristles. Mid tibia with row of about 5 short pale-colored posterodorsals, 1 anterodorsal bristle at middle of segment. Only 1 strong spur at apex of middle tibia. Hind femur with pair of preapical dorsal bristles, posterior tibia with ca. 8 short pale anterodorsal and 2 anteroventral bristles. Male genitalia (Fig. 40a) with cercus triangular; epandrium with numerous prominent hairs around dorsal margin; surstylus truncate at apex. Female piercer short, ca. 1/2 length of 8th segment, blunt at apex with 2 long and 2 short preapical setae (Fig. 40d). Three oval spermathecae with rather long necks and small nipple at apex (Fig. 40e).

Four species of this genus are presently known. One of these, *H. pellucens* Hardy, is known only from the Philippines; the other 3 extend into the area included in this study.

Species of *Hexacinia* are differentiated by the intensity, size and arrangement of dark spots on the thorax and the hyaline to subhyaline markings in the wings. Considerable variation has been noted and the diagnostic value of some of the characters is questionable. Much needs to be learned by comparing large numbers of specimens from throughout the range of the genus. Also, biological information is needed; nothing is known of the host associations of these flies.

KEY TO SPECIES OF *HEXACINIA*

1. Cell R₅ narrowly hyaline, or subhyaline along apical margin; antenna all yellow 2
 Large subquadrate mark in apex of R₅ not filling cell (Fig. 41a); pale marks on wing margin comparatively large; apical 1/2 of antenna brown to black . . . (widespread throughout SE Asia) **radiosa**
2. Spots in wing field small, usually tiny, round, occupying only fraction of cell width 3
 Spots comparatively large, consisting mostly of transverse, elongate spots, equal or nearly equal to width of cell . . . (Philippines) **pellucens**
3. Three hyaline marks on margin in cell R₁, including 1 at end of vein R₁ (Fig. 40b); thorax with conspicuous dark brown to black markings; lower lobe of cervical sclerite brown to black . . . (New Guinea; Maluku) **punctifera**
 Two hyaline marks in R₁ (Fig. 42); markings on thorax rather indistinct; cervical sclerite yellow . . . (Philippines; Sabah; Solomon Is; Sulawesi; Sumatra) ... **stellipennis**

Hexacinia punctifera (Walker)

Fig. 40

Sophira punctifera Walker, 1861, J. Proc. Linn. Soc. Lond., Zool. 6: 15. Type-locality: Gilolo, Maluku. Type ♀ in BMNH.

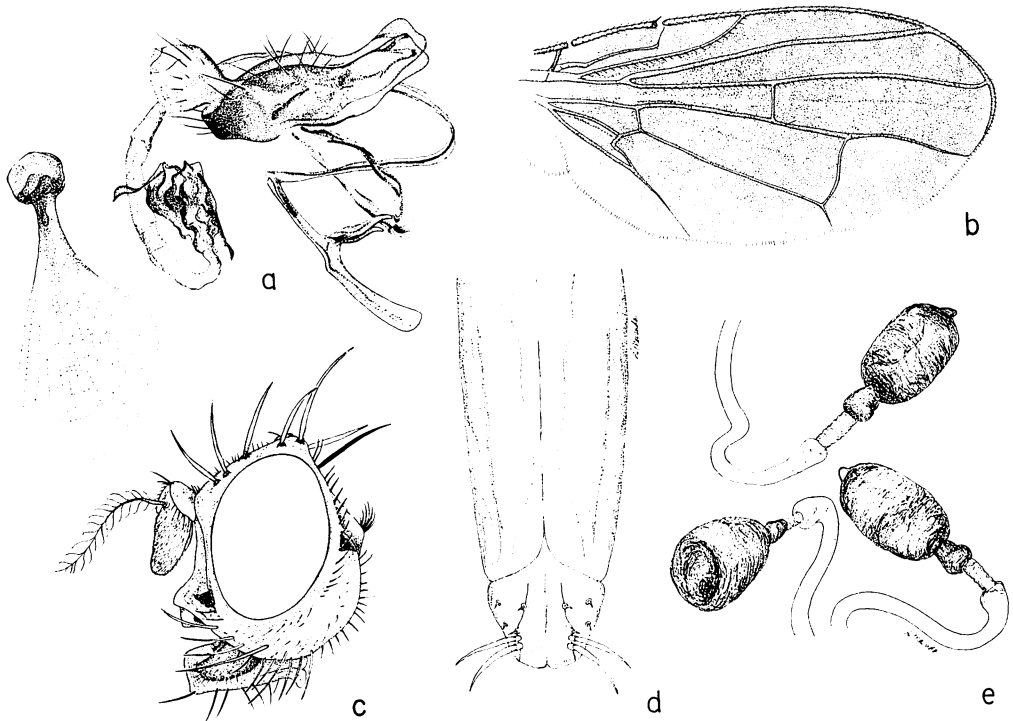


FIG. 40. *Hexacinia punctifera*: a, ♂ genitalia; b, wing; c, head; d, ♀ apex of piercer; e, ♀ spermathecae.

Hexacinia multipunctata Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 438. Type-locality: Wewak, Papua New Guinea. Type ♂ in CIHS.

Hexacinia flavipunctata Hering, 1940, Siruna Seva 2: 8. Type-locality: "Key-Insel Toel Staol, Amboina." Type ♂ was in ZMUH and is lost. New synonymy.

Diagnosis. Hering suggested that *Hexacinia flavipunctata* may be a subspecies of *H. multipunctata* Malloch, but I find no valid characters for separating it. This species is characterized by the presence of conspicuous black spots on the thorax and 3 hyaline marks in cell R₁ (Fig. 40b).

Thorax with 8 black spots on sides of mesonotum in 2 irregular rows; 2 black spots on side of scutellum, at bases of basal and apical bristles; 8-10 black spots on pleura in 2 irregular rows; lower lobe of cervical sclerite black. Male genitalia as in Fig. 40a. Basal segment of ♀ ovipositor ca. equal in length to terga 4+5. Piercer 1/2 as long as 8th segment shaped as in Fig. 40d.

Lengths: body and wing each 5.5-6.5 mm.

Distribution. New Guinea and Maluku.

Specimens examined. Walker's type and 1♂ specimen from Gilolo in UQM (cf. Hardy 1922a: 286). One paratopotype of *H. multipunctata* Malloch (USNM). Ca. 20 specimens with the following data. MALUKU: Amboina [Ambon]: VII.1908 (F. Muir); Ambon: Waai, V.1960, VII.1963 & I.1967 (A.M.R. Wagner). PAPUA NEW GUINEA: Torricelli Mts, Siauti, 9-17.XI.1958 (W.W. Brandt); Robbies Crk nr Bulolo, 26.VI.1979 (H. Roberts); E Sepik Prov, Dreikiki, 400 m, 23.VI.1961 (J.L. Gressitt); Central Prov, Morequin, 24.VII.1982, on river margin (J. Ismay); Northern Prov, Mt Lamington, V.1927 & X.1929 (C.T. McNamara); Northern Prov, Mamoo plant, 25.IX.1957, in forest clearing (J.J.H. Szent-Ivany). IRIAN JAYA: Bodem, 11 km SE of Oerberfaren, 100 m, 7-17.VII.1959 (T.C. Maa).

Hexacinia radiosa (Rondani)

Fig. 41

Acinia stellata Macquart, 1851, Mém. Soc. Sci. Agric. Arts, Lille 1850: 266. Preocc. Macquart, 1843. Type-locality: Manila, Philippines. Type ♀ in UMO.

Acinia radiosa Rondani, 1868, Ann. Soc. Nat. Hist. Modena 3: 31. Replacement name for *stellata* Macquart, 1851.

Hexacinia nigroantennata Hering, 1956, Verh. Naturforsch. Ges. Basel 67: 70. Type-locality: Sri Lanka. Type ♀ in NHMB.

Diagnosis. This species fits the description of *H. punctifera* except that it has a prominent, rather quadrate, hyaline mark at the apex of cell R₅, not filling the cell (Fig. 41a) and the apical 1/2 of the antenna is brown to black. I find no other differentiating characters.

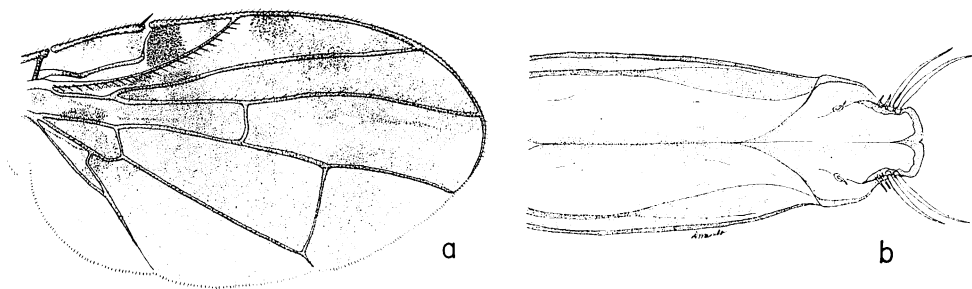


FIG. 41. *Hexacinia radiosa*: a, wing; b, ♀ apex of piercer.

The apex of the ♀ piercer as in Fig. 41b.

Distribution. Widespread throughout SE Asia. It has been recorded from Sumatra, but I have not seen it from Indonesia.

Specimens examined. Types of *A. stellata* and *H. nigroantennata*; specimens from Thailand and Vietnam as previously reported (Hardy 1973: 106).

Hexacinia stellipennis (Walker)

Fig. 42

Trypeta stellipennis Walker, 1860, J. Proc. Linn. Soc. Lond., Zool. 4: 156. Type-locality: Makasar [Ujung Padang], Celebes [Sulawesi]. Type ♂ in BMNH.

Hexacinia stigmatoptera Hendel, 1928, Entomol. Mitt. 17: 353. Type-locality: Luzon, Philippines. Lectotype ♀ in USNM.

Hexacinia celebensis Hering, 1941, Siruna Seva 3: 22. Type-locality: Celebes [Sulawesi]. Type ♂ in ZMHB.

I find no characters for differentiating this species from *H. punctifera* except that cell R_3 has only 2 hyaline marks on the margin (Fig. 42), marks on the thorax are pale brown and indistinct, and the cervical sclerite is entirely yellow.

Distribution. Philippines, Sulawesi, Sumatra, Sabah, and Solomon Islands.

Specimens examined. Types of all 3 taxa above. Large series from the Philippines as reported elsewhere (Hardy 1974: 73). Ca. 12 specimens with the following data. MALAYSIA: SABAH: Sandakan Bay, Sapagaya Lumber Co, 6.XI.1957 (J.L. Gressitt); Kenigan 12-17.I.1959 (T.C. Maa). PNG: N SOLOMON IS: Bougainville: Numa Numa pln, 20.VI.1957, resting on cocoa tree (J.H. Barrett). Also specimens in BMNH from Sumatra.

Hyponeothemara Hardy, new genus

Type of genus: *Trypeta multistriga* Walker.

This genus is similar to *Neothemara* but differs by having the scutellum bare, the face produced on the lower portion above the oral margin, and the distinctly different wing markings (Fig. 43, 51b).

I first considered this group a subgenus, but since presence or absence of setation on the scutellum and shape of face are usually considered of generic importance in the Tephritidae, I feel it best to treat it as a genus. Two species are placed here.

Etymology. The generic epithet combines the Greek *hypo*, "under, beneath," or "less than," with *Neothemara*. It refers to the close relationship of this genus with *Neothemara*.

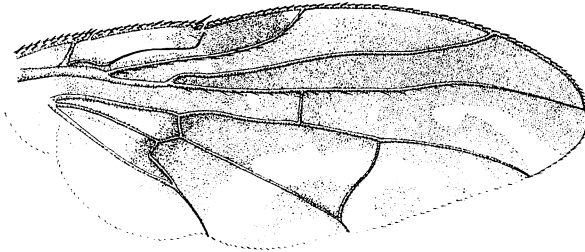


FIG. 42. *Hexacinia stellipennis*, wing.

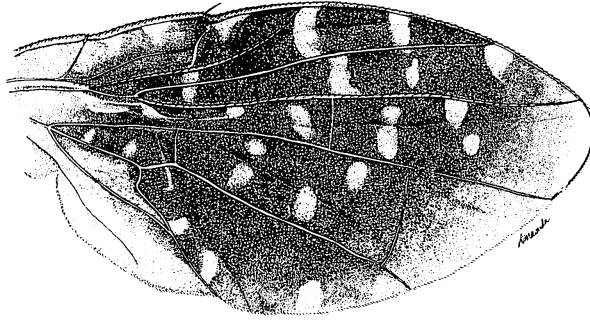


FIG. 43. *Hyponeothemara formosa*, wing.

***Hyponeothemara formosa* (Malloch), new combination**

Fig. 43

Neothemara formosa Malloch, 1939, Ann. Mag. Nat. Hist. Ser. 11, 4: 255. Type-locality: Kirakira, San Cristobal, Solomon Islands. Type ♀ in BMNH.

Diagnosis. This species fits the characters of *H. multistriga* (Walker), n. comb. with the exception of wing and thoracic markings and a dark brown central vitta down the middle of the front.

Mesonotum with lateral vittae interrupted at suture; submedian longitudinal black vittae attenuated at suture, broadened behind, not joined with broad black marking along posterior margin; broad U-shaped mark occupying posterior 2/5 of mesonotum. Pleura with longitudinal black vitta from propleuron across middle of mesopleuron and pteropleuron. Sternopleuron yellow. Wing with venation similar to *H. multistriga* but anterior portion dark brown except for subhyaline markings in costal cells and faint indication of hyaline mark on margin at apex of cell Sc. Cell R_5 with 2 tiny hyaline spots, 1 before and 1 after r-m crossvein, slightly curved narrow hyaline streak through apical portion of cell. Cell 2nd M_2 with small hyaline wedge at upper apex, hyaline circular mark in middle, isolated brown spot on margin, hyaline streak from apex of vein Cu_{1+1stA} through apical portion of 1st M_2 to m crossvein (Fig. 43).

Length: body 7.0 mm.

Distribution. Solomon Islands.

Specimens examined. The holotype ♀ (unique).

***Hyponeothemara multistriga* (Walker), new combination**

Fig. 44

Trypeta multistriga Walker, 1859, J. Proc. Linn. Soc. Lond, Zool. 3: 119. Type-locality: Aru Island, Maluku. Type ♀ in BMNH.

Dirioxa setinervis Hering, 1953, Treubia 21: 520. Type-locality: Bernhard Camp, New Guinea. Type ♀ in RNHL. New Synonymy.

Diagnosis. This species can be readily differentiated from all known species of the *Neothemara* genus complex by the distinctive markings of the wing (Fig. 44d) and mesonotum (Fig. 44c).

Head and appendages (Fig. 44a) yellow to yellow-white; tinge of brown on lower median portion of front, dark brown to black transverse streak across hind portion of occiput. Front

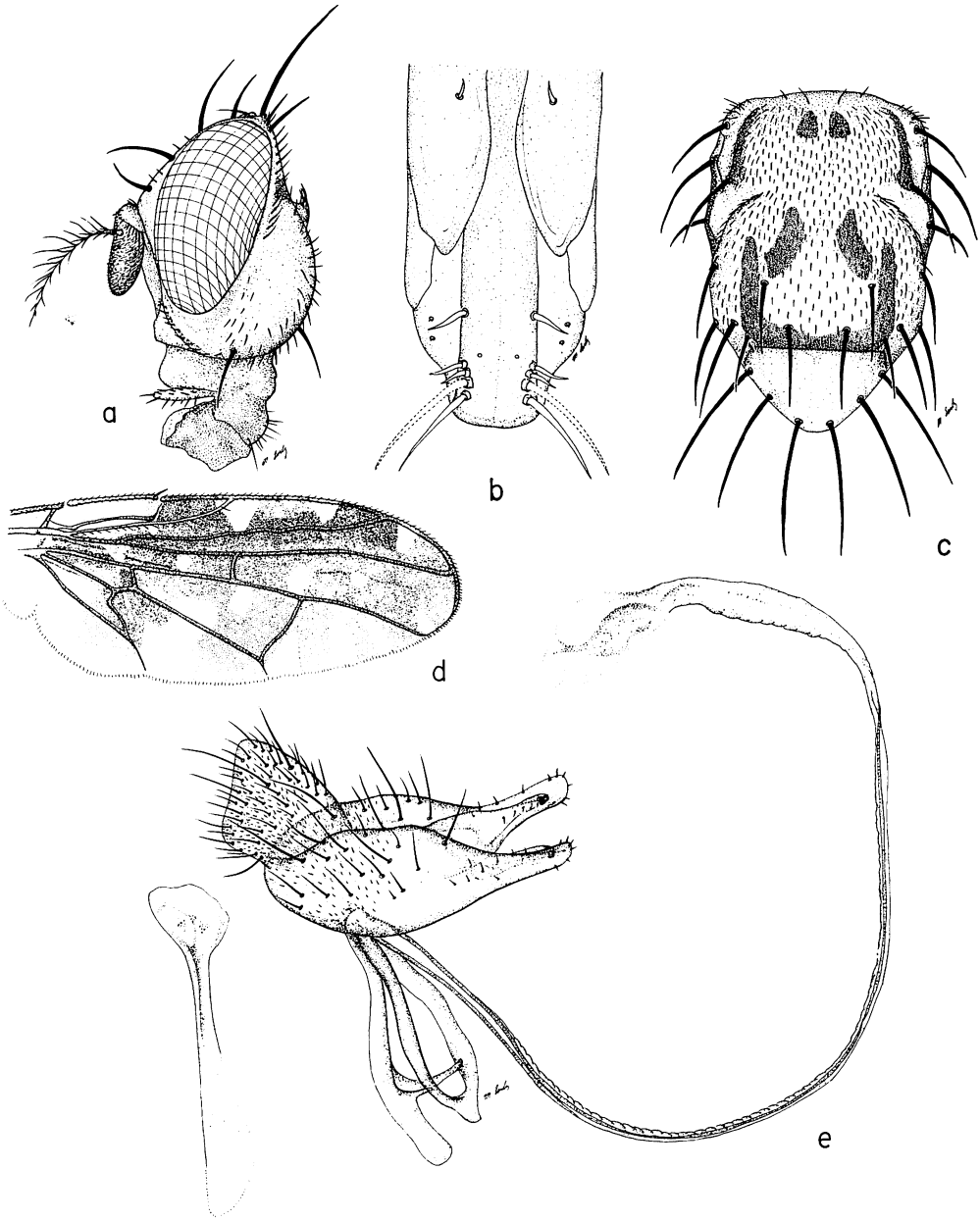


FIG. 44. *Hyponoethemara multistriga*: a, head; b, ♀ apex of ovipositor; c, thorax, dorsal view; d, wing; e, ♂ genitalia.

sloping, face straight on upper $2/3$, distinctly produced above oral margins. Ocellar bristles rather well developed, almost equal in size to postocellars. Inferior and superior fronto-orbitals well developed, evenly spaced. Median portion of front with numerous erect dark setae. Submedian row of rather strong black setae on side of posterior portion of occiput, lower portion rather densely covered with erect black setae; 1 seta on lower posterior margin bristlelike, ca. equal in size to genal bristle. Thorax yellow with following dark brown to black markings: mesonotum with large spot on side, above and behind humerus; 2 pairs of submedian spots, 1 presutural and 1 postsutural; broad U-shaped mark on posterior $2/5$ with bottom of U along posterior margin, arms extending in line with intrapostalar bristles beyond level with supraalars; narrow line along side behind humerus to wing base; longitudinal mark from lower margin of cervical sclerite across pro- and mesopleura and middle of pteropleuron, this mark broadly expanded on posterior portion of mesopleuron covering most of sternopleuron except for anterior and posterior corners and ventral margin, metanotum and lower portion of pleurotergite. Legs mostly yellow; apical 2 tarsomeres of front leg, mid and hind coxae, usually all of mid femur, and apical $2/3$ of hind femur brown. Secondary spur of middle tibia less than $1/2$ as long as outer spur. Bristling of mid and hind tibiae as in other members of this complex of genera. Wing mostly brown, 2 or sometimes 3 hyaline marks in cell R_1 , 3 hyaline marks in R_5 beyond r-m crossvein, 1 before r-m crossvein, 3 hyaline marks on margin in cell 2nd M_2 , 1 isolated mark in 1st M_2 , large mark from margin through M_4 into middle of 1st M_2 (Fig. 44d). Third costal section ca. $2/3$ as long as 2nd. Costal spine slightly over $1/2$ as long as upcurved portion of Sc. Vein R_{2+3} almost straight, gently undulate. Crossvein r-m at ca. apical $3/5$ of cell 1st M_2 , lobe of Cu almost as long as vein Cu_{1+1stA} . Abdomen with 1st tergum all yellow, 2nd and 3rd broadly yellow in middle and on hind margin, black on side. Fourth tergum black in ♀, narrow yellow posteromedian border in ♂. Fifth tergum dark brown to black in ♂, tinge of yellow to rufous at apex, ♀ with posteromedian portion broadly yellow, black on side narrowly at base. Sixth tergum of ♀ yellow in middle, black on lateral margin. Male genitalia as in Fig. 44e. Ejaculatory apodeme narrow, poorly developed in specimen examined. Specimen may be teneral although it appears fully hardened. Basal segment of ovipositor black, $2\times$ longer than wide, equal in length to terga 3-6. Piercer blunt at apex (Fig. 44b); with 3 round spermathecae.

Lengths: body 6.0-6.5 mm; wing 6.5-7.0 mm.

Distribution. Aru Island; widespread on island of New Guinea and Sulawesi.

Specimens examined. Both types. Ca. 50 specimens with the following data. PAPUA NEW GUINEA: Morobe Prov, Wau, 1200 m, 26.X.1961 (J. Sedlacek); same loc., 10.IX.1981, in rain forest (J.W. Ismay); Bubia, nr Lae, 27.XII.1963 (D.K. McAlpine); Stony logging area, nr Bulolo, 15.VII.1979 (H. Roberts); Aroana Estate, Aroa Riv, 2.XII.1963 (McAlpine); Central Prov, Glogo, 1.I.1981 (Ismay); Lomari Crk nr Brown Riv, 12.II.1982 (Ismay). IRIAN JAYA: Vogelkop, Kebar Val, W of Manokwari, 550 m, 4-31.I.1962 (L.W. Quate); Cyclops Mts, Ifar, 300-500 m, 28-30.VI.1962 (J. Sedlacek). INDONESIA: Sulawesi: Noongan, 50 km S of Manado, 1200 m, 2-10.XII.1973 (H. Kurahashi); Sadaunta Riv, 700 m, III.1976 (M. Becker).

Remarks. Hering (1953) placed this species in the genus *Dirioxa* on the basis of its having the arista feathered only on the dorsal surface. His observation was incorrect; both the dorsal and ventral margins are long-haired. Some variation has been seen in the development of the posteromedian spots on the mesonotum; sometimes these spots are fused with the arms of a U-shaped mark in area of the dorsocentral bristles.

Genus **Kertesziola** Hering

Kertesziola Hering, 1941, Ann. Hist. Nat. Mus. Natl. Hung. 34: 50. Type-species: *Ptilona lateralis* Kertész, 1901 [= *Helomyza meritoria* Walker, 1864].

This genus fits in the group of genera that have only veins R₁ and R₄₊₅ setose; the ocellars setalike; 2 strong spurs on the middle tibia; intrapostalar bristles present; and the scutellum with 6 strong marginal bristles and setose at least on side. It fits close to *Themaroides* Hering but differs by having the superior fronto-orbital bristles closely placed, on upper 1/4 of front; only 1 strong inferior fronto-orbital plus 1 or 2 weak hairlike bristles or strong setae near the lower margin of front in some specimens; the costal spines comparatively small, only 2-3× longer than costal setae; the wing with a large hyaline wedge in cell R₁, usually hyaline spots or large marks in cell R₅ beyond the r-m crossvein (Fig. 45, 46, 47f); vein M₁₊₂ gently curved upward at its apex; the face vertical; no extra supraalar bristles posterior to the main bristle but with a small bristle in front of it; and the scutellum bare in middle of disc, setose on sides.

Three species are presently known.

KEY TO SPECIES OF *KERTESZIOLA*

- 1. Posterior margin of mesonotum and sides of metanotum brown to black; section of vein M₁₊₂ between crossveins straight; wing with hyaline "V" or narrow wedge in cell R₁, small isolated hyaline spots in cell R₅ (Fig. 47f), or R₅ entirely brown (Fig. 45) 2
 Thorax entirely yellow; M₁₊₂ convex between crossveins; large nearly quadrate mark in R₁ extending broadly to vein R₄₊₅, large marks filling R₅ continuous with hyaline marking in 1st M₂ (Fig. 46) **flava, n. sp.**
- 2. Hyaline mark in cell R₁ small, narrow; cell R₅ entirely brown (Fig. 45) ... **acanthoneurides**
 Hyaline mark in R₁ wedge-shaped; cell R₅ with 3 round hyaline marks (Fig. 47f) **meritoria**

***Kertesziola acanthoneurides* (Hering), new combination** Fig. 45

Rioxina acanthoneurides Hering, 1953, Treubia 21: 516. Type-locality: Rattan Camp, Irian Jaya. Type ♀ in RNHL.

This species probably is a synonym of *K. meritoria* (Walker). The only characters I can find to separate it from *meritoria* are the size of the hyaline mark in cell R₁, which is small and narrow by comparison, and the entirely dark brown cell R₅ (Fig. 45, 47f). As noted in the description of *meritoria*, considerable variation has been seen in the development of hyaline spots in cell R₅. Also, the type of *acanthoneurides* has the metanotum extensively black with a faint rufous tinge in ground color. In *meritoria* it is predominantly yellow, brown to black on sides. This is a variable character and not diagnostic.

Distribution. Irian Jaya.

Specimens examined. Holotype ♀.

Remarks. More specimens need to be studied to clarify *K. acanthoneurides*' status with respect to *meritoria*.

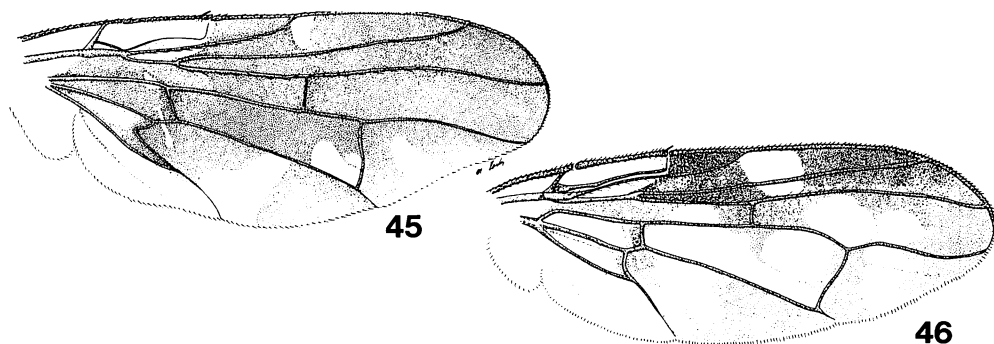


FIG. 45-46. 45, *Kertesziola acanthoneurides*, wing. 46, *Kertesziola flava*, wing.

***Kertesziola flava* Hardy, new species**

Fig. 46

Diagnosis. This species differs from other known *Kertesziola* by having the thorax entirely yellow, lacking brown to black markings; the wing with a large, almost quadrate mark in cell R_1 extending broadly to vein R_{4+5} ; large hyaline marks in cell R_5 extending full width of the cell and confluent with hyaline marking filling most of cell 1st M_2 and continuing through M_4 (Fig. 46); section of vein M_{1+2} between r-m and m crossveins distinctly convex and the last section of M_{1+2} gently sinuate; the lobe of cell Cu short, $1/3$ - $1/4$ length of transverse section of vein Cu, rather than being sharp pointed and approximately equal in length; and the anterior spur at apex of the middle tibia approximately $2/3$ as long as the posterior spur, rather than subequal. The ovipositor base is slender, $3\times$ longer than wide and equal in length to terga 3-6. The piercer was not extruded for study. Otherwise it fits the description of *K. meritoria* (Walker), n. comb.

Lengths: body, without ovipositor, 7.6 mm; basal segment of ovipositor, 2.5 mm; wing, 9.5 mm.

♂. Unknown.

Holotype ♀, PAPUA NEW GUINEA: Garaina, 1800 m, 15.I.1968 (J.H. Sedlacek) (BPBM 13,347). 1♀ paratype, Morobe Prov, Wau, Nami Crk, 1670 m, 26.VIII.1963, malaise trap (Sedlacek) (UH).

Etymology. The specific epithet is from the Latin *flavus*, "yellow," and refers to the all yellow thorax.

***Kertesziola meritoria* (Walker), new combination**

Fig. 47

Helomyza meritoria Walker, 1864, J. Proc. Linn. Soc. Lond., Zool. 7: 218. Type-locality: Mysol [Misool], Maluku. Type ♀ in BMNH.

Ptilona lateralis Kertész, 1901, Termesztud. Fü. 24: 428. Type-locality: New Guinea. Type ♀ in TMB. New synonymy.

Diagnosis. This species is similar to *K. acanthoneurides* but differs by the wing markings (Fig. 47f) given in the key.

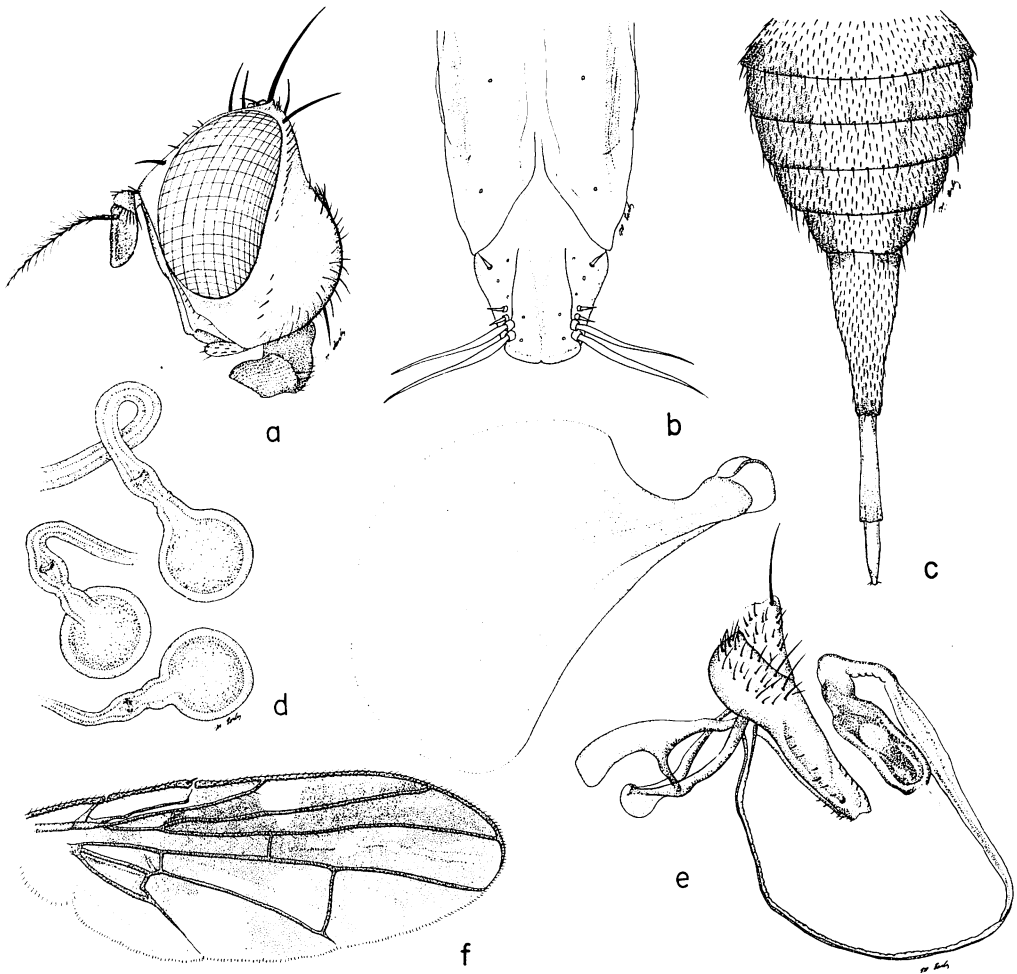


FIG. 47. *Kertesziola meritoria*: a, head; b, ♀ apex of piercer; c, ♀ abdomen; d, ♀ spermathecae; e, ♂ genitalia; f, wing.

Predominantly pale yellow to rufous, dark brown to black border along posterior margin of mesonotum, large black mark on side of metanotum, dark brown to black on side of abdomen. Dark lateral abdominal coloring in ♂ extends on side from apical 1/2 of 2nd tergum to basal 2/3 of 5th, in ♀ from basal 1/2 to 3/5 of 2nd tergum to apex of 6th. Head (Fig. 47a). Ocellar bristles setalike. Superior fronto-orbitals comparatively small, upper equal in size to postverticals, 2 pairs near upper margin of front just below level with median ocellus. One distinct inferior fronto-orbital at lower margin of front, almost in line with edge of lunule, 2-3 rather large black setae in line with inferior bristles. Front with numerous scattered erect setae. Third antennal segment $1\frac{1}{2}$ × longer than wide, broadly rounded, ca. 1/2 length of front. Arista long plumose, row of moderately long, curved hairs along inner margin. Face vertical in lateral view, slightly carinate on upper portion, flattened below. Thorax with usual complement of bristles, lacking extra

bristle posterior to supraalar, small intrapostalar bristle directly in line with basal scutellars. Dorsocentral bristles ca. 2/3 distance from supraalars to postalar. Strong pteropleural present. Two strong subequal bristles at apex of middle tibia. Wing (Fig. 47f). Third costal section ca. 2/3 as long as 2nd, vein R_{2+3} straight or nearly so. Prominent V-shaped wedge in cell R_1 just beyond vein Sc to upper 2/3 of cell R_3 near level with r-m crossvein. Small brown hyaline spot in cell R_5 before r-m crossvein, 2 larger brown spots in cell beyond crossvein, posterior portion of wing hyaline except for band of brown across m crossvein to margin (some specimens lack the small hyaline spot in cell R_5 before r-m crossvein and have just a tiny brown spot beyond the m crossvein). Male cercus small, ca. equal in length to epandrium, tapered to a point, prominent bristle at apex of lobe. Surstylus nearly straight sided, truncate at apex, almost as wide as epandrium. Lobe of 10th sternum short, hidden by surstylus. Ejaculatory apodeme greatly expanded (Fig. 47e). Basal segment of ♀ ovipositor mostly yellow to rufous, brown at apex and base, ca. equal in length to abdominal segments 3-6 (Fig. 47c). Piercer blunt at apex, 2 large and 2 short preapical setae on side (Fig. 47b). Three round spermathecae with extroverted necks (Fig. 47d).

Lengths: body 8.0-9.0 mm; wing 9.0-10.0 mm.

Distribution. Maluku and New Guinea.

Specimens examined. Ca. 30♂,♀ with following data. PAPUA NEW GUINEA: Bulolo, Stony logging area, 765 m, on leaf bamboo, 31.I-23.III.1979 (H. Roberts); Garaina, 800 m, 16.I.1968 (J. & M. Sedlacek); Kuminius, nr Maprik, 17.XII.1963 (D.K. McAlpine); Morobe Prov, Wau, 1200-1300 m, 6-7.XI.1961, 4.V-11.IX.1965, & 5-7.I.1974 (J. & M. Sedlacek & S. Shinonaga); Western Highlands, Baiyer Riv, 8.VIII.1982 (J.W. Ismay); Koroda, 400 m, 14-16.XI.1965 (Sedlacek & Sedlacek); 1200 ft [365 m], IV.1933 (L.E. Cheesman); Karimui, 1080 m, 13.VII.1963 (J.L. Gressitt); Finisterre Range, Saidor, Aiyawa Vill, 16-23.VI.1958 (W.W. Brandt); Owen Stanley Range, Goilala, Loloipa, 25.XI-10.XII.1957 (W.W. Brandt). IRIAN JAYA: Cyclops Mts, 3500 ft [1066 m], III.1936 (Cheesman).

Genus *Lyronotum* Hering

Lyronotum Hering, 1941, Mitt. Dtsch. Entomol. Ges. 10: 112. Type-species: *Acanthoneura seriata* de Meijere, 1915, by original designation.

This genus is monotypic, known only from the type female of *seriatum*. Hering allied it to *Neothemara* Malloch and *Diarrhegmoides* and separated it by the 2 strong spurs at the apex of the mid tibia. It seems to fit near *Themaroides* Hering and *Kertesziola* but differs by having 3 hyaline marks in cell R_1 , 1 in cell R_3 , several hyaline spots on the posterior margin and middle of the wing (Fig. 48), and the face concave in the middle.

Eyes oval. Third antennal segment oval, about $1\frac{1}{2}$ × longer than wide, extending ca. 1/2 length of face. Arista long plumose. Two pairs superior fronto-orbital bristles, well spaced on upper 1/2 of front. Two pairs inferior fronto-orbitals approximate on lower 1/3 of front. Ocellars setalike. Thorax with full complement of bristles, with 1 interalar bristle, secondary scutellars somewhat shorter than others. Costal spines small. Crossvein r-m at ca. apical 3/5 of cell 1st M_2 . Third costal section short, ca. 3/5-2/3 as long as 2nd section. Only veins R_1 and R_{4+5} setose.

Lyronotum seriatum (de Meijere)

Fig. 48

Acanthoneura seriata de Meijere, 1915, Tijdschr. Entomol. 58: 125. Type-locality: Zoutbron, northern New Guinea. Type ♀ in ZMUA.

Diagnosis. *Lyronotum seriatum* can be recognized by the characters given for the genus.

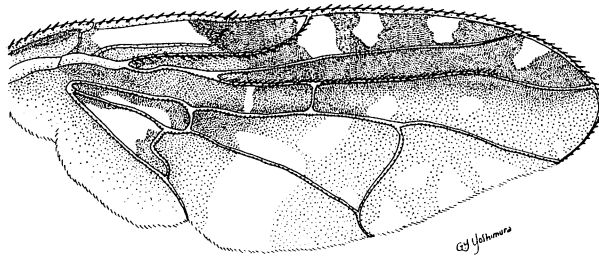


FIG. 48. *Lyronotum seriatum*, wing.

Mostly yellow to rufous, dark brown to blackish markings on thorax and abdomen, femora mostly dark brown, tinged with black. Mesonotum with dark streak on side from above humerus nearly to suture, pair of small dark elongate presutural spots between these marks. Lyre-shaped dark mark on side behind suture joined together in middle before scutellum. Dark mark from each notopleuron to wing base. Longitudinal vitta from propleuron across middle of mesopleuron, onto pteropleuron; sternopleuron mostly brown to blackish, yellow on posterodorsal portion. Abdomen black on lateral margin, terga 1-3 and 5-6 largely yellow, tergum 4 mostly brown to blackish. Basal segment of ovipositor dark brown to blackish, ca. equal in length to terga 3-6. Wing as noted above for genus, dark brown with a number of hyaline spots around margin and in middle (Fig. 48).

Lengths (as given by de Meijere): body 6.0 mm (probably including ovipositor); wing 5.0 mm.

Distribution. New Guinea.

Specimen examined. The holotype ♀ (unique).

Mimoeuphranta Hardy, new genus

Type of genus: *Mimoeuphranta diaspora*, n. sp.

This genus resembles *Euphranta* (*Euphranta*) Loew in general facies and in lacking prescutellar and intrapostalar bristles but is not related to it. *Mimoeuphranta* fits in the Acanthonevrini by having 6 scutellar bristles as well as by other characters. It differs from *Euphranta* by having the pleuroterga pubescent only, without hairs; 6 scutellars; presutural bristles; the scutellum bare; the face straight; the oral margin not protruded; the 3rd antennal segment short, not much longer than wide, scarcely 1/3 length of the face; the dorsocentral bristles posterior in position, almost in line with the postalar bristles; and a row of 10-15 black bristles along the anterior margin of the mesonotum, almost equal in size to the postvertical bristles.

The genus keys near *Tritaeniopteron* de Meijere but is not related to it, differing by the characters given in the key and the description below.

Head nearly quadrate in shape, front very gently sloping (Fig. 49a). Two pairs inferior fronto-orbitals, rather close together near lower margin of front, 2 pairs superior fronto-orbitals on upper 1/2. Upper superior bristles small, scarcely larger than ocellar bristles, ca. 2× longer than setae of occipital row. Arista moderately plumose, row of short hairs on inner margin. Thorax with full complement of bristles except lacking prescutellars and intrapostalars. Pteropleural bristles well developed, equal or larger than meso- or sternopleural bristles. Dorsocentrals com-

paratively small, ca. $3/5$ to $2/3$ as long as and just slightly in front of postalar bristles. Secondary bristles of scutellum small, ca. $1/4$ – $1/3$ as long as apical bristles. Pteropleuron densely pale setose, row of black, bristlelike setae along anterior margin. Propleuron black setose. Middle tibia with 1 strong apical spur. Mid tibia with a few black posterodorsal setae at middle, hind tibia with ca. 5 black anterodorsal setae at middle. Costal spine prominent, almost equal in length to upcurved portion of Sc. Third costal section ca. $1/2$ as long as 2nd. Vein R_{2+3} almost straight. Crossvein r-m slightly before middle of cell 1st M_2 , lobe of cell Cu short, acutely pointed, ca. $1/3$ as long as vein Cu_{1+1stA} . Wing markings as in Fig. 49d.

Etymology. The generic epithet combines the Greek *mimos*, "imitator," with *Euphranta*; it refers to the similarity with the genus *Euphranta*. The gender is feminine.

Mimoeuphranta diaspora Hardy, new species

Fig. 49

Diagnosis. This species can be readily differentiated by the characters given for the genus.

♂. *Head.* Shaped as in Fig. 49a and as described above. Pale yellow to white, ocellar triangle black, brown to black mark down middle of front, broad dark brown mark along side of back of occiput. Face and gena densely white tomentose, median portion of face tinged with brown in ground color, obscured by white tomentum. Median portion of occiput yellow, lower median portion densely white pollinose. Interfrontal area with only scattered erect setae. Antennal grooves moderately developed, extending entire length of face. Median portion of face slightly raised, carinate on upper median portion below antennae. Vibrissae represented only by pale inconspicuous setae. Third antennal segment and apical $1/2$ of palpus tinged with brown. Clypeus dark brown to blackish. *Thorax.* Predominantly dark brown to black in ground color, rather densely covered with gray pollen, faint indication of 2 submedian brown vittae. Yellow on

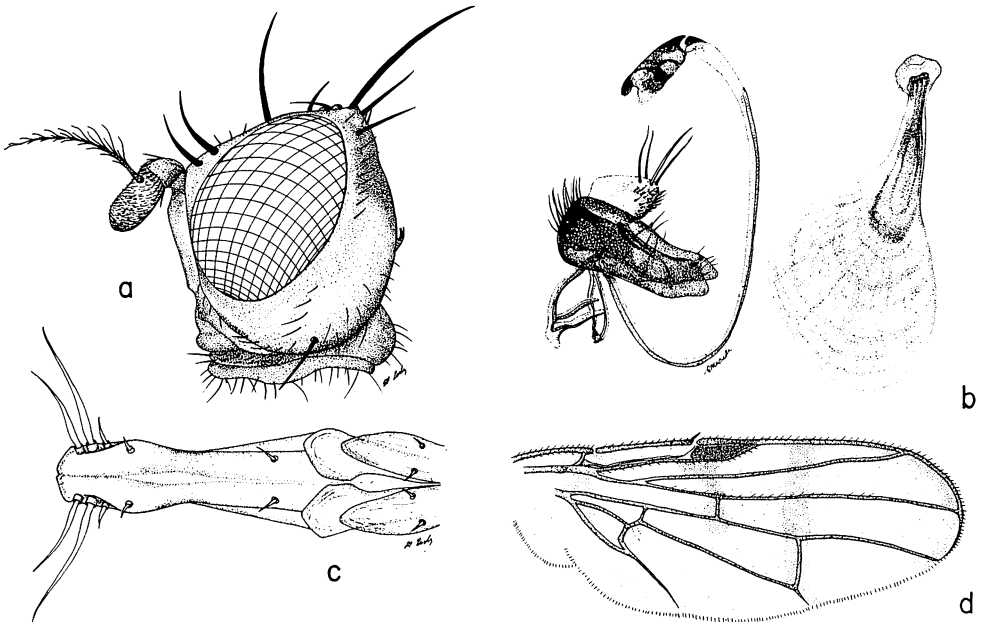


FIG. 49. *Mimoeuphranta diaspora*: a, head; b, ♂ genitalia; c, ♀ apex of piercer; d, wing.

humerus, broad median portion of scutellum, posteromedian portion of mesonotum behind dorso-central bristles continuing onto scutellum, and narrow line along upper margin of mesopleuron. Stems and knobs of halteres yellow. *Legs*. Femora mostly brown, yellow on extreme apices and on tibiae and tarsi. *Wing*. Mostly hyaline with subcostal cells dark brown, continuous mark of brown extending across r-m crossvein into upper margin of cell 1st M_2 ; complete brown transverse band from costa in middle of cell R_1 to posterior margin at level of m crossvein, narrow rim of brown around apex from upper apical portion of cell 2nd M_2 narrowly connecting with brown transverse band (Fig. 49d). Third costal cell short, ca. $2/3$ as long as 2nd. Vein R_{2+3} straight or nearly so, r-m crossvein slightly before middle of cell 1st M_2 . Lobe of cubital cell short, ca. $1/4$ as long as vein Cu_{1+1stA} . Veins R_1 and R_{4+5} setose above, R_s bare. *Abdomen*. Mostly dark brown to black in ground color, densely gray pollinose, yellow on side of 1st tergum and narrow apices of terga 3–5. Male genitalia as in Fig. 49b, surstylus short, blunt; vanes of aedeagal apodeme not fused, arising separately from axis of apodeme.

Lengths: body 4.75 mm; wing 4.0 mm.

♀. As ♂ except apical $1/5$ of 5th tergum yellow, 6th tergum yellow, brown on lateral margin. Basal segment of ovipositor dark brown, equal in length to terga 4+5, pair of preapical dorsal bristles equal in length to bristles at apex of 6th tergum. Piercer slender, blunt at apex, 2 large and 1 small yellow preapical setae on side (Fig. 49c). Three round, short-necked spermathecae.

Lengths: body, excluding ovipositor, 5.7 mm; wing 5.0 mm.

Holotype ♂ (BPBM 13,348), allotype ♀ (BPBM), 1♂ paratype, PAPUA NEW GUINEA: NE, Western Highlands, Baiyer Riv Sanct., 8.VIII.1980 (J.W. Ismay). 6♂, 2♀ paratypes with following data. PAPUA NEW GUINEA: Apangai, nr Maprik, 15.XII.1963 (D.K. McAlpine). IRIAN JAYA: Nabire, 5–50 m, 25.VIII–2.IX.1962 (H. Holtmann). SOLOMON IS: Guadalcanal: Poha Riv, 5 m, 20.VI.1966 (J.L. Gressitt); Guadalcanal: Tathimani, 13–14.V.1960 (C.W. O'Brien); San Cristoval: Napagiwae, 19.VIII.1960 (O'Brien). Paratypes in AMS and UH.

Etymology. The name is from the Latin *diaspora*, "scattering" or "dispersion," and refers to the apparent wide distribution of this species.

Genus *Neothemara* Malloch

Neothemara Malloch, 1939, Ann. Mag. Nat. Hist. Ser. 11, 4: 253. Type-species: *Rioxa formosipennis* Walker, 1861, by original designation.

This genus has never been clearly defined. Malloch compared it with *Themara* Walker, but the 2 are not related. *Neothemara* falls in the group of genera that have the ocellars moderately developed, $2/3$ – $3/4$ as long as postocellars; only veins R_1 , R_{4+5} , and R_s setose above; 2 pairs of inferior fronto-orbital bristles; only 1 strong spur at apex of middle tibia; 6 strong, equal-sized scutellar bristles; the pleuroterga and intrapostalar bristles well developed; and the wing mostly dark brown with hyaline marks on the margin and in field. It fits in a complex of genera that have vein R_{2+3} gently undulate; the costal spine moderately developed, shorter than length of upcurved portion of vein Sc ; the last sections of veins R_{4+5} and M_{1+2} straight or very gently convex, the thorax yellow with 2 submedian longitudinal black vittae or 2 pairs of black spots on the mesonotum; and a broadly U-shaped black postsutural mark or a prominent J-shaped mark on side. It fits near *Hyponeothemara*, n. gen., but differs by having the scutellum setose on the disc and the face straight in profile, receding at oral margin (Fig. 51c). Also, the wing markings are distinctive (Fig. 50b, 51b).

Three species belong here. The genus is known only from the island of New Guinea.

KEY TO KNOWN SPECIES OF *NEOTHEMARA*

1. Mesonotum with black vittae; scutellum setose on disc, with black spot on side 2
 Thorax all yellow; scutellum bare, without lateral black spot; dorsocentral bristles in
 line with supraalars *digressa*, n. sp.
2. Cell R_1 with prominent hyaline wedge extending to apex of vein R_1 and through cell
 R_3 (Fig. 52) *trigonifera*
 Cell R_1 typically with narrow hyaline streak extending into the upper part of cell R_3
 (Fig. 51b) *formosipennis*

Neothemara digressa Hardy, new species

Fig. 50

Diagnosis. This is an aberrant species appearing to best fit in *Neothemara*. It differs from other known species by having the scutellum entirely bare and the thorax all yellow, lacking brown to black vittae. It also differs by having the dorsocentral bristles in line with the supraalars, rather than halfway between supraalars and postalars. Otherwise, it fits the characteristics of the genus.

♀. *Head.* Higher than long, face straight in profile, receding at oral margin. Two pairs well-developed inferior and 2 pairs superior fronto-orbital bristles evenly spaced on front. Ocellar bristles setalike. Supracervical setae black. *Thorax.* Yellow, reddish brown on side of mesonotum; with usual complement of bristles including 6 equal-sized scutellars and strong intrapostalars. Propleuron with prominent black, bristlelike setae along anterior margin. *Legs.* Entirely yellow, bristles as typical for genus, mid tibia with anterior spurs 1/2 or less as long as posterior. *Wing.* Distinctively marked as in Fig. 50b. Costal spine strong, equal in length to upcurved portion of vein Sc. Third costal section ca. 2/3 as long as 2nd. Vein R_{2+3} gently curved, R_{4+5} gently convex beyond r-m crossvein. Crossvein r-m at apical 2/3 of cell 1st M_2 , lobe of cell Cu moderately long, pointed, ca. 1/3 as long as vein Cu_{1+1stA} . Mostly hyaline or subhyaline basad of forking of radial sector. Second costal section brown at apex, faint discoloration of brown in middle. Third costal section (cell Sc) brown at base and apex, hyaline in middle. Cell R_1 with large quadrate hyaline mark filling cell just beyond apex of vein R_1 , small hyaline wedge in apical 3/5 of 4th costal section. Cell R_3 with narrow transverse hyaline mark opposite r-m cross-

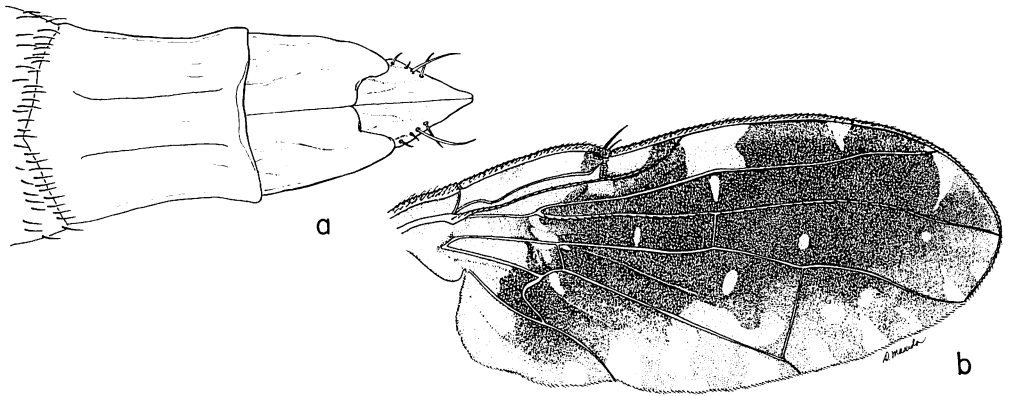


FIG. 50. *Neothemara digressa*: a, ♀ apex of piercer; b, wing.

vein, elongate narrow mark at upper apex extending almost to vein M_{1+2} . Cell R_5 with small narrow transverse hyaline mark in basal portion before r-m crossvein, 2 hyaline marks in field beyond crossvein, 2 on margin at apex of cell. Cell 1st M_2 with small transverse preapical mark in middle, curved hyaline mark in lower apical portion connected with 2 hyaline marks in cell M_4 . Cell 2nd M_2 with 5 hyaline spots. *Abdomen*. Yellow, brown markings on sides of terga 3-6. Ovipositor yellow to rufous, basal segment broad, scarcely longer than wide, ca. equal in length to terga 3-5. Piercer broadly flattened dorsoventrally (Fig. 50a).

Lengths: body, excluding ovipositor, 6.0 mm; wing 6.5 mm.

♂. As ♀. Genitalia not relaxed for study.

Holotype ♀, PAPUA NEW GUINEA: Sinofi, 30 km S of Kainantu, 1590 m, 1-6.X.1959 (T.C. Maa) (BPBM 13,349). Allotype ♂, Western Highlands, Nondugl, 2200-2700 m, 28.V.1959 (C.D. Michener) (BPBM).

Etymology. The specific epithet is from the Latin *digressus*, "departure" or "deviation"; it refers to this species being aberrant from other *Neothemara*.

Neothemara formosipennis (Walker)

Fig. 51

Rioxa formosipennis Walker, 1861, J. Proc. Linn. Soc. Lond., Zool. 5: 252. Type-locality: Dory, Irian Jaya. Type ♂ in BMNH.

Diagnosis. This species is very close to *N. trigonifera* Hering but differs by having only a narrow hyaline to subhyaline streak in the middle of the anterior margin of the wing (Fig. 51b).

Head as noted above and as in Fig. 51c, front gently sloping, face vertical down median portion. Yellow, ocellar triangle black, brown vitta down middle of front. Thorax yellow with following black markings: mesonotum with vitta along side margin from above humerus to above wing base; pair of submedian vittae and J-shaped black mark on side from hind margin before scutellum, bending in line with intrapostalar bristle and extending as narrow black vitta to suture (Fig. 51a); scutellum with black spot on side, brown to black mark in middle at base; longitudinal vitta from propleuron across middle of meso- and pteropleura to just beyond pteropleural bristle; black line across upper posterior margin of sternopleuron onto edge of hypopleuron, isolated dark brown spot on anterodorsal portion of sternopleuron; metanotum broadly dark reddish brown to black on side. Mid tibia with inner spur at apex ca. 2/5-1/2 as long as outer spur, 1-2 reddish brown to blackish posterodorsal bristles. Hind tibia with row of anterodorsals and 2 posterodorsals in middle of segment. Wing mostly dark brown, costal spine almost as long as upcurved portion of vein Sc. Third costal section subequal to 2nd. Vein R_{2+3} gently undulate. Crossvein r-m at ca. 3/5 length of cell 1st M_2 , lobe of cell Cu almost equal in length to vein Cu_{1+1stA} . Abdomen mostly black, 1st 2 terga yellow, brown to black on lateral margin, other terga yellow on apicomedian margins. Base of ♀ ovipositor reddish, tinged with brown, blackened on apical 1/2, slightly longer than wide, ca. equal in length to terga 4-5. Piercer blunt at apex (Fig. 51d). Three small round spermathecae. Male genitalia (Fig. 51e) with apex of aedeagus enlarged, equal in size to epandrium and surstylus.

Lengths: body 7.0-7.5 mm; wing 7.5-8.0 mm.

Distribution. Throughout island of New Guinea.

Specimens examined. Type and 1♀ paratype. Ca. 75 specimens from numerous localities throughout Papua New Guinea and Irian Jaya.

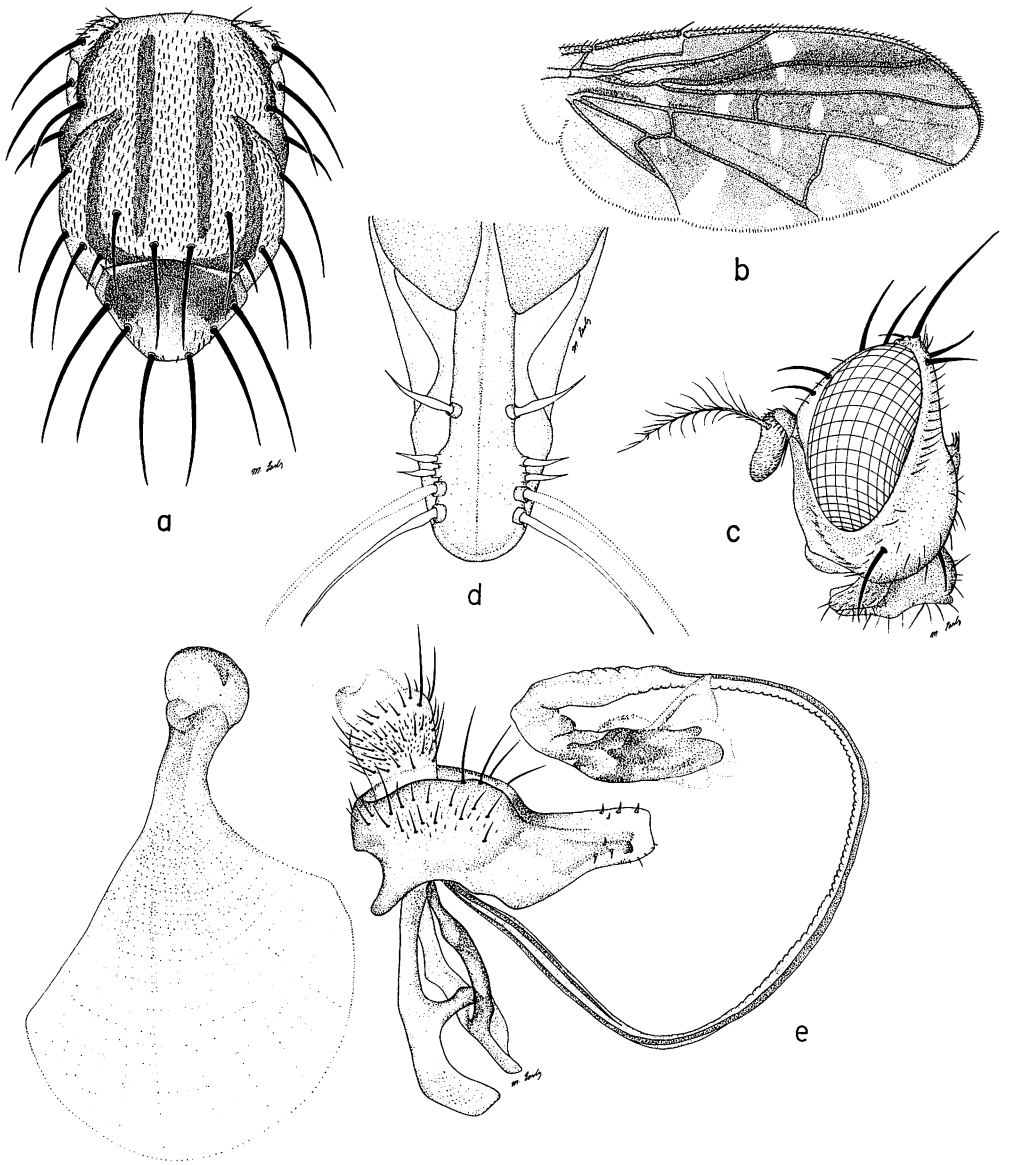


FIG. 51. *Neothemara formosipennis*: a, thorax, dorsal view; b, wing; c, head; d, ♀ apex of piercer; e, ♂ genitalia.

Remarks. Some variation in wing markings evident but is not sexual dimorphism as suggested by Hering. Hyaline mark on the margin in cell R_1 is variable in development, usually narrow streak that extends across part of cell R_3 (Fig. 54b), diffused and not continuous in some specimens, reduced to a faint indication of a streak in a few. A

tiny round hyaline spot is typically present at the lower apex of cell R₅, absent in some specimens, and doubled in 1.

Neothemara trigonifera Hering, new status

Fig. 52

Neothemara formosipennis form *trigonifera* Hering, 1951, *Siruna Seva* 7: 6. Type-locality: "New Guinea."
Type ♀ in BMNH.

Diagnosis. The only differentiating characters I see for this species are the presence of a prominent hyaline wedge in cell R₁, extending to apex of vein R₁ and through cell R₃ (Fig. 52); hyaline marks in cell R₅ that are more prominent, 2 extending across the cell; and (on type) lack of a hyaline spot at the apex of R₅. *Neothemara formosipennis* has a narrow hyaline to subhyaline streak across cell R₁, often interrupted and diffuse, not extending to vein R₄₊₅; and spots in R₅ all smaller, less prominent, 1 or sometimes 2 spots present at the apex of the cell (Fig. 51b).

Distribution. New Guinea.

Specimen examined. The ♀ holotype (unique).

Remarks. De Meijere (1906: 93) recorded 1 female as "*formosipennis*," from "Moaif," which is probably the same species. His wing drawing (loc. cit. Fig. 16), however, shows a hyaline spot at the apex of cell R₅. This spot is not present on the type of *N. trigonifera*.

Hering (1951) thought he was dealing with sexual dimorphism and indicated that the female of *formosipennis* has a large hyaline wedge at the middle of the anterior margin of the wing, whereas the male has only a narrow, somewhat diffused marginal mark. This observation is not correct and I am elevating his form *trigonifera* to species rank.

Nothoclusiosoma Hardy, new genus

Type of genus: *Trypanocentra vittithorax* Malloch.

Malloch's *Trypanocentra vittithorax* is an anomaly; the face is vertical and the male surstylus short, rounded apically like those of *Trypanocentra* Hendel, but the front leg of the male is as in *Clusiosoma* Malloch. It differs from *Clusiosoma* by having the face raised along the median portion, vertical in lateral view; vein M₃₊₄ bare, or with not more than 1 or 2 setae above near the basal portion; the padlike process at the apex of the male tibia lacking the fringe of long curved hairs on posterior margin (Fig. 53c)

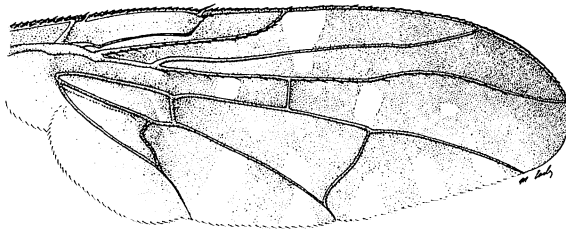


FIG. 52. *Neothemara trigonifera*, wing.

that is typical of *Clusiosoma*; the surstylus is short and thick, rounded at apex; and the lobe of the 10th sternum is short and thickened (Fig. 53b). Because of the similar male genitalia and the shape of the face, the relationship of this genus would be nearest to *Trypanocentra*, but the front leg of the male is *Clusiosoma*-like (Fig. 53c); also, vein R_1 is comparatively long, extending beyond the level with r-m crossvein so that the 3rd costal section is equal in length to the 2nd (Fig. 53d). In both *Clusiosoma* and *Trypanocentra*, vein R_1 ends before or about opposite r-m and the 3rd costal section is short, $3/5$ - $2/3$ as long as 2nd.

Head (Fig. 53a) with 2 pairs each of inferior and superior fronto-orbitals, upper superiors moderately strong, equal or slightly longer than postvertical bristles. Margin of vertex narrow, not developed into a prominent backward developed keel as in *Rabaulia* Malloch. Ocellar bristles setalike. Front gradually sloped, rather oblique, antenna at ca. upper $3/5$ of head height, ca. $2/3$ length of face. Thorax with usual complement of bristles, dorsocentrals at level almost halfway between supraalars and postalars. Scutellum bare except for 6 strong marginal bristles, secondary bristles ca. $2/3$ as long as basals. Secondary spur of mid tibia ca. $2/5$ as long as large spur. Wing uniformly brown with veins R_1 , R_{3+4} , and Cu setose above, venation as in Fig. 53d. Costal spines short, scarcely over $2\times$ stronger than costal setae. Vein M_{3+4} bare above in ♂ specimen at hand, 2 small setae near basal portion in ♀.

Etymology. The generic epithet combines the Greek *nothos*, "spurious," with *Clusiosoma*.

***Nothclusiosoma vittithorax* (Malloch), new combination**

Fig. 53

Trypanocentra vittithorax Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 429. Type-locality: Mondo, Papua New Guinea. Type ♀ in BMNH.

Diagnosis. This species superficially resembles *Trypanocentra mallochi*, n. sp., by having the thorax yellow with 6 dark brown to black longitudinal vittae on the mesonotum. It differs by the *Clusiosoma*-like front leg of the male (Fig. 53c); the bare or nearly so vein M_{3+4} ; by having vein R_1 extending distinctly beyond the level with the r-m crossvein and the 3rd costal section equal in length to the 2nd; and the costal spines, at apex of vein Sc, small, scarcely $2\times$ larger than costal setae.

Head and appendages yellow, black spot on ocellar triangle, tinge of brown down median portion of front. Thorax yellow, 6 dark brown to black vittae on mesonotum, lateral vitta complete, median pair from level with humeral bristles to posterior margin, submedian pair from suture to posterior margin. Scutellum brown, tinged rufous. Broad black vitta on side from propleuron across mesopleuron to front margin of pteropleuron, brown mark across upper portion of sternopleuron. Legs yellow. Front femur swollen, 2 irregular rows of bristles on postero-ventral surface, only short setae along anteroventral surface. Front tibia of ♂ swollen on apico-ventral portion into very densely pilose yellow padlike process (Fig. 53c). Front basitarsus with densely placed short yellow setae along ventral surface. Abdomen mostly dark reddish brown to black, tinged rufous on basal 3 segments. Male genitalia as in Fig. 53b. Female ovipositor not relaxed for study. Basal segment approximately equal in length to segments 3-6.

Lengths: Malloch (1939) gave the length of the type ♀ as 6.5 mm. The specimens on hand measure 4.5 mm for body; 5.0 mm for wing.

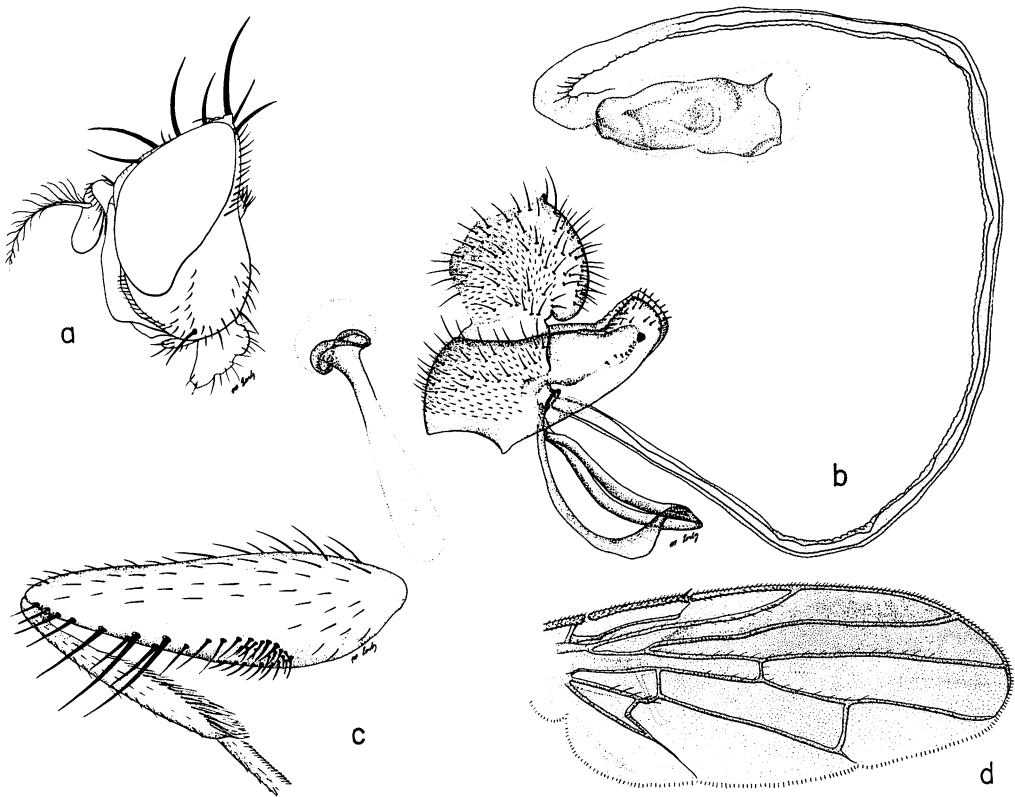


FIG. 53. *Nothoclusiosoma vittithorax*: a, head; b, ♂ genitalia; c, ♂ front leg, posterior view; d, wing.

Distribution. Island of New Guinea.

Specimens examined. Holotype ♀. PAPUA NEW GUINEA: 1♂, Nondugl, 2200–2700 m, 28.V.1959 (C.D. Michener). IRIAN JAYA: 1♀, Kutsime, W of Swart Val, 1500 m, 14.XI.1958 (J.L. Gressitt); 1♂, 1♀, Star Mts, Sibil Val, 1245 m, 18.VIII–8.XI.1962 (S. & L. Quate).

***Othniocera* Hardy, new genus**

Type of genus: *Othniocera pictipennis*, n. sp.

Diagnosis. This genus apparently fits in the *Diarrhegmoides* genus complex by having the last sections of veins R_{4+5} and M_{1+2} arcuate, and by the wing and body markings. It rather closely resembles some species of *Phasca* Hering but is readily differentiated from all known Acanthonevrini by the unusually large 3rd antennal segment of both sexes (Fig. 56c). It also differs from related genera by having the secondary scutellar bristles small, $1/4$ – $1/3$ as long as apical bristles; the face straight in lateral view, slightly produced above the oral margin; and the vibrissae on the facial margins inconspicuous.

Head higher than long, eyes oval, gena rather narrow (Fig. 56c). Two pairs of strong superior fronto-orbitals on upper 1/2-2/3 of front, usually 2 inferior fronto-orbitals on lower 1/4, lower inferior sometimes represented by a large seta, or may be absent. Ocellar bristles small, setalike, interfrontal area rather thickly covered with erect dark setae. Antennal furrows rather shallow, continuing full length of face, middle portion of face slightly carinate on upper 2/3. Antenna reaching almost to oral margin (Fig. 54a, 56c). Third segment ca. 3× longer than wide, width equal to 1/2 or more of face. Palpus rather slender, 4-5× longer than wide. Thorax with bristle arrangement as in *Phasca*, intrapostalars prominent, dorsocentrals slightly behind line between supraalars. Pteropleural bristles well developed. Pleuroterga with only fine white setae. Mid tibia with 3-5 posterodorsal bristles at middle of segment, hind tibiae with 5-10 anterodorsals in middle, 1 anteroventral at apical 2/3. Basal portion of wing mostly hyaline to subhyaline, apical portion with 2 large brown arches, hyaline wedge from middle of anterior margin in cell R₁ to vein R₄₊₅, costal spine large (Fig. 56a). Third costal section short, ca. 1/2 as long as 2nd, vein R₂₊₃ almost straight. Lobe of cell Cu 1/2-2/3 as long as vein Cu_{1+1stA}. Female ovipositor and spermathecae as in Fig. 56b, d. Piercer flattened dorsoventrally, short, broad.

Three species are presently known.

Etymology. The generic epithet combines the Greek words *othnio*, "strange," and *keras*, "horn"; it refers to the unusual development of the antennae. The gender is feminine.

KEY TO SPECIES OF *OTHNIOCERA*

- 1. Thorax predominantly or entirely pale yellow to rufous 2
 Thorax mostly shining black with 3 yellow-white vittae on mesonotum; wing as in Fig. 56a **pictipennis, n. sp.**
- 2. Third antennal segment greatly enlarged, extending 3/4-4/5 distance to oral margin (Fig. 55a); thorax entirely yellow to rufous; wing as in Fig. 55b **pallida, n. sp.**
 Third antennal ca. 2/3 as long as face (Fig. 54a); mesonotum dark brown to black on hind border, with 4 pale reddish brown longitudinal vittae; wing as in Fig. 54b **aberrans, n. sp.**

Othniocera aberrans Hardy, new species

Fig. 54

Diagnosis. This species differs from other *Othniocera* by having the 3rd antennal segment only 2/3 as long as face and mesonotum dark brown to black posteriorly with 4 pale reddish brown longitudinal vittae. It would seem to be somewhat intermediate between *Othniocera* and *Phasca* because the wing venation and markings and vertical face are similar to *Phasca*. It differs from *Phasca* by having only 1 pair of inferior orbital bristles; the 3rd antennal segment distinctly larger than normal (Fig. 54a and 60a); crossvein r-m at middle of cell 1st M₂, rather than at apical 2/3-3/4; and the hairs of vibrissal row very short and inconspicuous. It fits closest to *O. pallida*, n. sp., because of the predominantly pale-colored thorax, but it differs by having smaller antennae (Fig. 54a and 55a); 1 pair of inferior fronto-orbitals; a thick brush of black setae on the supracerical sclerite, not pale yellow setae; the mesonotum dark brown to black on the posterior border, 4 pale brown longitudinal vittae; and some dark markings on the pleura and mesonotum, rather than *thorax* all yellow to rufous. By having only 1 pair of distinct inferior fronto-orbitals, it keys near *Stigmatomyia*, n. gen., but it differs from that genus by having vein R₂₊₃ nearly straight; the 3rd costal section less than 1/2

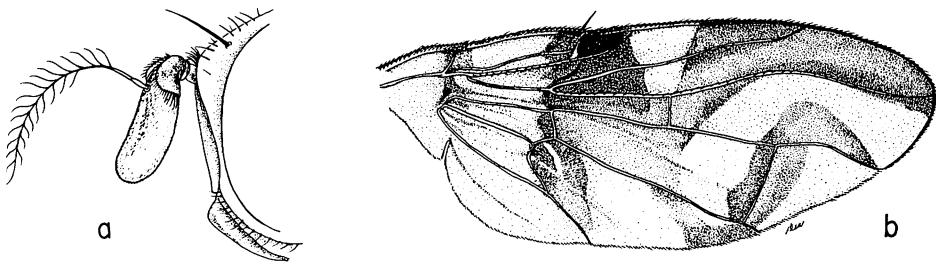


FIG. 54. *Othniocera aberrans*: a, anterior margin of head; b, wing.

length of 2nd; the 4th costal section nearly 2× longer than 5th; the prebasal portion of the wing hyaline; and the lobe of cell Cu distinctly shorter than vein Cu_{1+1stA} .

♀. *Head*. Shaped as in typical *Othniocera* (Fig. 54a) pale yellow, faint brownish discoloration down middle of front. Holotype with only 1 prominent inferior fronto-orbital on side, 1 or 2 fine short hairs below, 2 or 3 above in line with bristles; paratype with thin secondary inferior bristle. Third antennal segment ca. $\frac{3}{4}$ length of front (Fig. 54a). *Thorax*. Yellow, hind portion of mesonotum dark brown to black, 4 pale reddish-brown longitudinal vittae, submedian pair complete, lateral pair interrupted at suture, evanescent beyond suture. In paratype brown to black posterior portion of mesonotum divided by yellow coloring down midline. Anteromedian portion of scutellum dark brown. Pleura with brown oblique band from propleuron across upper edge of mesopleuron and lower portion of notopleuron, ending just above wing base. Faint streak of brown from lower posterior edge of mesopleuron across pteropleuron onto metapleuron and pleurotergon. Mesonotum dark reddish brown, tinged black on side. Intrapostalar bristles strong, ca. $\frac{2}{3}$ as long as prescutellars. Dorsocentral bristles just slightly behind level between supraalars. Secondary scutellars $\frac{1}{2}$ – $\frac{3}{5}$ as long as apical bristles. *Legs*. As typical for genus. Hind tibia with 5 reddish-brown anterodorsal bristles at middle, 1 anteroventral at apical $\frac{2}{3}$, mid tibia with 3 posterodorsal bristles at middle. *Wing*. As noted above and as in Fig. 54b. Vein R_{2+3} gently curved, lobe of cell Cu ca. $\frac{2}{3}$ as long as vein Cu_{1+1stA} . *Abdomen*. Broadly shining black on bases of terga 4 and 5 and anteromedian portion of 3, terga 1–2 tinged reddish brown on basomedian portions, otherwise yellow. Base of ovipositor yellow, apex dark brown to black, ca. 2× longer than wide, equal in length to terga 2–5. Piercer not mounted for study; it appears to be as in other species of this genus.

Lengths: body, excluding ovipositor, 6.5 mm; wing 7.25 mm.

♀. Unknown.

Holotype ♀, PAPUA NEW GUINEA: Gumi, nr Bulolo, 13.VIII.1979, under *Musa* leaf (H. Roberts) (BPBM 13,350). 1♀ paratype, PAPUA NEW GUINEA: Bulldog Rd, ca. 14 km S of Edie Creek, 2405 m, 4–10.VII.1966, malaise trap (G.A. Samuelson) (UH).

Etymology. The name is from the Latin *aberrans*, “wandering” or “to go astray”; it alludes to the species’ somewhat questionable placement.

Othniocera pallida Hardy, new species

Fig. 55

Diagnosis. *Othniocera pallida* differs from *O. pictipennis*, n. sp., by being almost entirely yellow to rufous with no black markings on the thorax or head, by having the

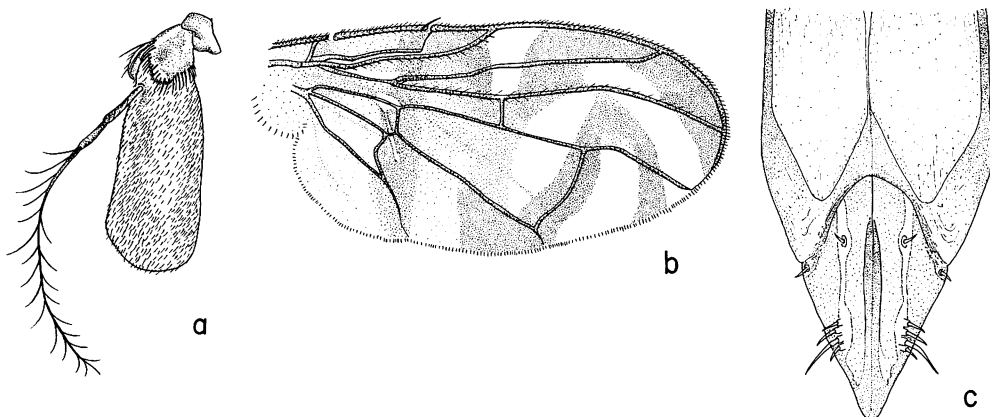


FIG. 55. *Othniocera pallida*: a, antenna; b, wing; c, ♀ apex of piercer.

wings with veins R_{4+5} and M_{1+2} only gently upcurved on the distal portions, and by lacking a complete hyaline band across the wing at level with 2nd costal section (Fig. 55b).

As in *O. pictipennis*, n. sp, except for body color and wing markings; 3rd antennal segment unusually broad, only $2\times$ longer than wide, equal in width to $1/2$ width of eye (Fig. 55a). Spinules around apex of mid tibia dark brown to black. Wing as in Fig. 55b. Abdomen mostly yellow, ♂ with dark brown to black basal bands on terga 3 and 4, 5th tergum shining black except for extreme apex; ♀ with dark brown to black crossbands on terga 3-5, basal segment of ovipositor brownish red, ca. equal in length to terga 3-5. Apex of piercer as in Fig. 55c. Otherwise fitting description of *pictipennis*.

Lengths: body 6.25-6.5 mm; wing 6.75-7.0 mm.

Holotype ♂, PAPUA NEW GUINEA: Morobe Prov, S of Wau, Bulldog Rd, 2700-2950 m, 30.V.1976, montane moss forest (W.C. Gagné) (BPBM 13,351). *Allotype* ♀, nr Wau, Mt Kaindi, 2300 m, 19-20.II.1977, at light (Gagné) (BPBM). 3♂, 2♀ paratypes from the following localities in PAPUA NEW GUINEA: 1, same as allotype, 16.IV-7.V.1973, malaise trap (J.L. Gressitt); 1, Mt Kaindi, N peak, 2350 m, 15-30.IX.1966 (G.A. Samuelson); 1, Mt Missim, 2350 m, 20-31.X.1966 (Samuelson); 2, Bulldog Rd, 14 km S of Edie Creek, 2405 m, 4-10.VII.1966 (Samuelson). Paratypes in BPBM and UH.

Etymology. The name is from the Latin *pallidus*, "pale"; it refers to the pale coloration of the body.

Othniocera pictipennis Hardy, new species

Fig. 56

Diagnosis. This species differs from other known species in *Othniocera* by having the thorax mostly shining black, with 3 yellow-white wedges from the anterior margin of the mesonotum to about level with the postalar bristles; veins R_{4+5} and M_{1+2} strongly arched on the distal portions, basal portion of the wing mostly hyaline; and markings as in Fig. 56a.

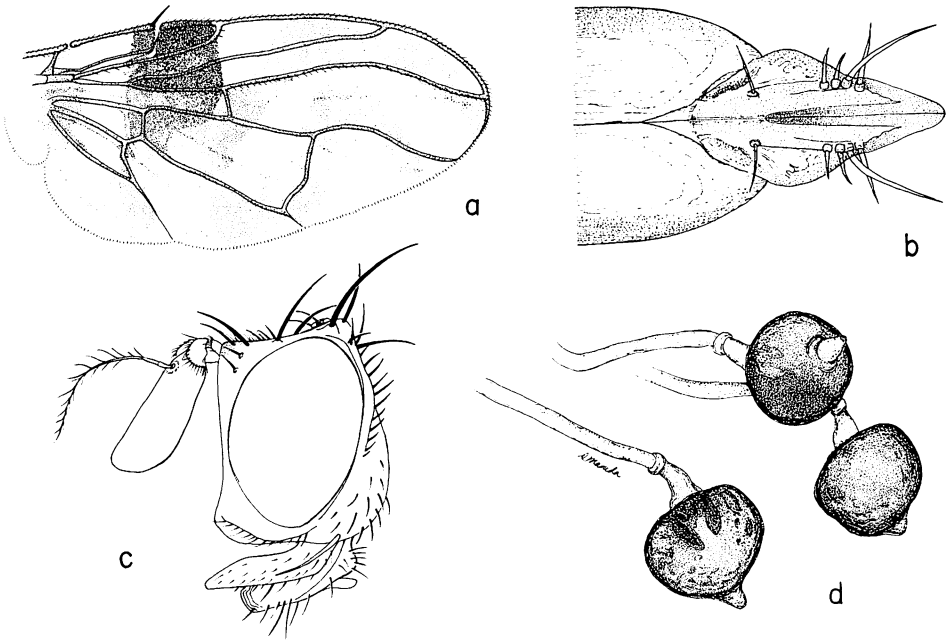


FIG. 56. *Othniocera pictipennis*: a, wing; b, ♀ apex of piercer; c, head; d, ♀ spermathecae.

♂. *Head*. Higher than long, rather rectangular, front transverse, not sloping, face vertical, slight protuberance above oral margin (Fig. 56c). Two inferior fronto-orbital bristles near lower margin of front, superior fronto-orbitals on upper 1/2 of front. Interfrontal area thickly black setose. Ocellar bristles ca. equal in length to occipital setae. Antennal grooves shallow, face almost flat, slightly raised down median portion. Third antennal segment $3\times$ longer than wide, unusually long, broad, width equal to 1/2 width of front. Head and appendages yellow, ocellar triangle dark, slight tinge of brown in middle of front, tinge of brown on 3rd antennal segment. Palpus ca. $4\times$ longer than wide, rather thickly short black setose. Gena narrow, ca. equal in width to 4-5 rows of eye facets. *Thorax*. Mostly shining dark brown to blackish, 3 rather broad tapered white vittae covering humerus. Propleuron entirely white, yellow to white on mesopleuron below spiracle to wing base, front portion of sternopleuron yellow to white. Dorsocentral bristles in line with supraalars. Intrapostalars strong, ca. equal in size to posterior notopleurals, secondary scutellars ca. 1/3 as long as apical bristles. *Legs*. Pale yellow, 1 black apical spur on mid tibia, apical spinules pale brownish yellow. Other leg characters as noted under generic description. *Wing*. Basal portion hyaline to ca. level with forking of veins R_{2+3} and R_{4+5} , rather faint brown streak at level with basal portion of 2nd costal cell. Apical 2/3 mostly brown, hyaline wedge from middle of anterior margin to vein M_{1+2} ; prominent hyaline arch through preapical portion of cell R_5 along upper portion of that cell below vein R_{4+5} , bending sharply, extending through cell 1st M_2 to vein M_{3+4} ; large hyaline wedges through cells 2nd M_2 and M_4 (Fig. 56a). Third costal section ca. 2/3 as long as 1st. Vein R_{2+3} gently curved, almost straight. Vein R_{4+5} and M_{1+2} arcuate beyond r-m and m crossveins. Crossvein r-m at middle of 1st M_2 , lobe of cell Cu ca. 1/2 as long as vein Cu_{1+1stA} . *Abdomen*. Mostly polished black, yellow on terga 1-2 and apicomedian margin of tergum 3. Genitalia not dissected for study.

Lengths: body 4.3-5.0 mm; wing 4.8-5.0 mm.

♀. As ♂ except abdomen with terga 3-5 polished black, tinge of red in ground color of tergum 2, narrow apicomedian margin of tergum 5 yellow to white. Tergum 6 yellow to white, tinged brown on lateral margin. Basal segment of ovipositor brown to blackish on apical 2/3, yellow basally, slightly wider than long, ca. equal in length to terga 4-6. Apex of piercer shaped as in Fig. 56b. Spermatheca rather mushroom-shaped, small nipple apically (Fig. 56d).

Lengths: body, excluding ovipositor, 4.5-5.25 mm; wing 5.25-6.0 mm.

Holotype ♂ (BPBM 13,352), allotype ♀ (BPBM), PAPUA NEW GUINEA: Gumi, nr Bulolo, on *Bambusa* leaf, 28.VII.1979 (H. Roberts). 6♂, 10♀ paratypes with following data: PAPUA NEW GUINEA: same loc. as types, montane forest, 3.IV.1979; lower Gumi, on *Bambusa*, 18.VIII.1979 (H. Roberts); upper Manki logging area, nr Bulolo, 5000 ft [1524 m], 15.XII.1972 & 9-30.III.1973, sticky trap (F.R. Wylie & P. Shanahan); Mt Kaindi, 2350 m, 1 on *Nothofagus*, others in malaise trap, 26.I.1971, 14.V.1973 & 16-30.IV.1973 (J.L. Gressitt); Wau, I.1970 (J. Sedlacek); Mt Gahavisuka, Goroka, 20-23.VI.1983 (Roberts). Paratypes in BPBM, FRSB, AMS and UH.

Etymology. The name combines the Latin words *pictus*, "painted" or "colored," and *pennis* "wing"; it refers to the picture wing.

Paedohexacinia Hardy, new genus

Type of genus: *Paedohexacinia flavithorax*, n. sp.

This is an aberrant taxon that somewhat resembles *Trypanocentra* because of the all dark brown wings and the vertical face, but it fits into an entirely different group of genera because it has only veins R_1 and R_{4+5} setose above. As in *Hexacinia*, it possesses the unusual character of having an extra mesopleural bristle near the lower median margin. In the key it runs near *Hexacinia*, but the 2 are not related. It differs by normally shaped and entirely brown wings; the arista, which is bare ventrally; the vertical face; the lack of a row of curved bristles on the genae; the well developed intrapostalar bristles; and other details as noted in the description.

Head (Fig. 58a) with two pairs superior fronto-orbitals on upper 1/2 of front, 2 pairs inferior fronto-orbitals on lower 1/2. Interfrontal area setose. Ocellar bristles moderately well developed, subequal in length to postocellars. Thorax with usual complement of bristles, extra mesopleural as noted above. Mesonotum densely erect setose, scutellum bare with 6 strong marginal bristles. Front femur moderately thickened, with row of rather strong posteroventral bristles, irregular row of shorter ventral bristles, prebasal clump of short black ventral bristles. Middle tibia with 2 short apical spurs, longer of 2 scarcely greater than width of tibia, short spur ca. 3/5-2/3 length or longer. Wing entirely dark brown. Veins R_1 and R_{4+5} setose above. Third costal section equal to or slightly longer than 4th. Crossvein r-m near apical 1/4 of cell 1st M_2 , lobe of cell Cu triangular, ca. 1/4 as long as vein Cu_{1+1stA} .

Etymology. The generic epithet combines the Greek *paedo*, "child," with *Hexacinia*, alluding to kinship with the genus *Hexacinia*.

Paedohexacinia clusiosomopsis Hardy, new species

Fig. 57

Diagnosis. This species fits near *P. flavithorax*, n. sp., but differs by having the front legs of the ♂ developed *Clusiosoma*-like, femur moderately swollen, ventral bristles and spicules very similar to those of *Clusiosoma*; front tibia slightly produced below at apex, comb of black spicules around apicoventral portion (Fig. 57); 3rd costal section

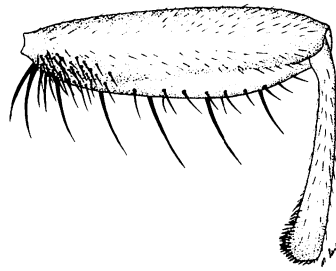


FIG. 57. *Paedohexacinia clusiosomopsis*: ♂ front femur and tibia.

slightly longer than 4th, vein R_{2+3} more sharply curved upward at apex; crossvein r-m near the apical 1/5 of cell 1st M_2 . Otherwise it fits the description of *flavithorax*.

Lengths: body and wings each 4.8-5.0 mm.

Holotype ♂, PAPUA NEW GUINEA: Laloki, II.1910 (F. Muir) (BPBM 13,353).

Etymology. The specific epithet combines the Greek suffix *opsis*, "like," with the name *Clusiosoma*; it refers to the similarities in the development of the front legs of the male.

***Paedohexacinia flavithorax* Hardy, new species**

Fig. 58

Diagnosis. This species differs from *P. clusiosomopsis* by having the front femur only slightly swollen and less conspicuously bristled ventrally; the front tibia not produced at apex and lacking a comb of black spicules; the 3rd costal section subequal in

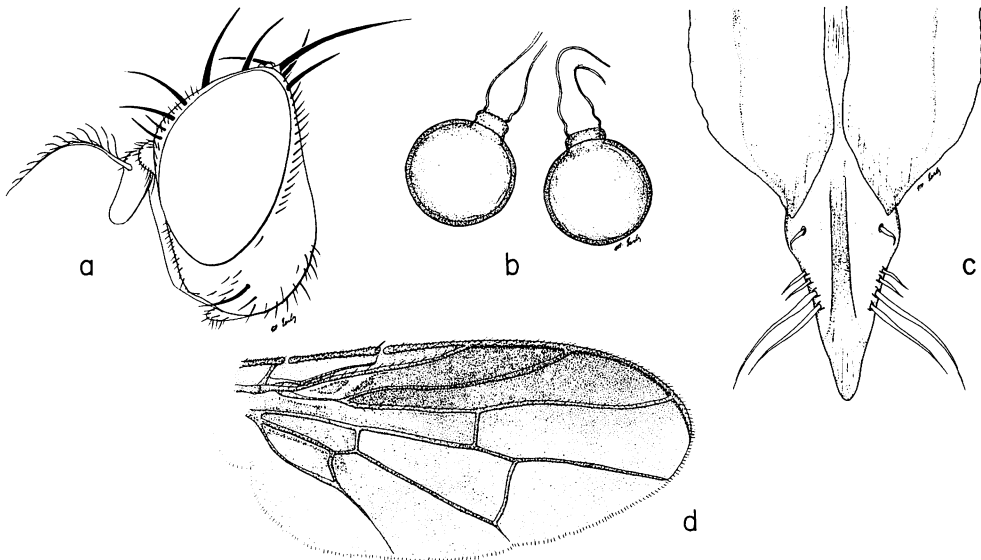


FIG. 58. *Paedohexacinia flavithorax*: a, head; b, ♀ spermathecae; c, ♀ apex of piercer; d, wing.

length to the 4th, vein R_{2+3} gently curved upward at its apex; and the r-m crossvein at about the apical $3/4$ of cell 1st M_2 (Fig. 58d).

♂. Yellow except for brown on abdomen. *Head*. Fits generic details above and as in Fig. 58a. Front oblique, antenna at upper $1/3$ of head height, face vertical, receding at oral margin. Third antennal segment nearly $2\times$ longer than wide, $< 1/2$ length of face. Middle portion of face flattened on lower $2/3$, narrowed into sharp keel on upper $1/3$. *Thorax and legs*. As noted above. Extra mesopleural bristle ca. $3/5$ as long as sternopleural. *Wing*. As noted above and as in Fig. 58d. *Abdomen*. First 2 terga yellow, 3rd tergum yellowish along basal margin, remainder of abdomen dark brown. Genitalia not dissected for study. Surstylus short, rounded at apex, cercus ca. equal in length to expandrium.

Lengths: body and wings each 4.0 mm.

♀. As ♂. Basal segment of ovipositor rather short, broad, ca. equal in length to terga 4+5. Piercer sharply pointed, 2 rather long and 2 short preapical setae on side (Fig. 58c). Spermathecae round, with short necks (Fig. 58b). Only 2 spermathecae on slide mount; 1 has been lost.

Lengths: body, excluding ovipositor, and wing each 4.5 mm.

Holotype ♂ (BPBM 13,354), allotype ♀ (BPBM), PNG: WOODLARK I (Murua): Kulumadau Hill, 16.III.1957 (W.W. Brandt). 1♂, 2♀ paratypes: 2, same data as type; 1, PAPUA NEW GUINEA: Daru, 2 m, 24-25.X.1960, "Pinanga" (J.L. Gressitt) (1 BPBM, 2 UH).

Etymology. The specific epithet combines the Latin *flavus*, "yellow," with "thorax"; it refers to the all yellow thorax.

Paraphasca Hardy, new genus

Type of genus: *Paraphasca taenifera*, n. sp.

This genus fits in the *Phasca* complex of genera based on the following characteristics: at least 2 inferior fronto-orbitals; ocellars setalike; 1 strong spur at apex of middle tibia; with intrapostalar bristles; dorsocentrals in line with supraalars; 3rd costal section short, last section of veins R_{3+4} and M_{1+2} convex. It differs from other genera by having the face concave in profile (Fig. 59a); only small, inconspicuous setae along the vibrissal row; the body predominantly yellow, the thorax black only on hind margin of metanotum; crossvein r-m near the middle of cell 1st M_2 ; and the wings distinctively marked as in Fig. 59b. It keys near *Alloeomyia*, n. gen., but differs by having strong pteropleural bristles, the scutellum entirely bare, and other details as discussed under *Alloeomyia*. Otherwise characterized as given in the species description below.

Etymology. The generic epithet combines the Greek *para*, "beside, nearby," with *Phasca*; it refers to the apparent close relationship with *Phasca*.

Paraphasca taenifera Hardy, new species

Fig. 59

Diagnosis. This species differs from other tephritids as noted under genus description.

♂. *Head* (Fig. 59a). Pale yellow to white, front gently sloping, face distinctly concave in middle. Antennal furrows shallow, upper portion of face slightly raised in middle. Two inferior fronto-orbital bristles approximate on lower portion of front, superior fronto-orbitals rather widely spaced on upper $1/2$. Genal bristles yellow with slight tinge of brown. Occiput with brown longitudinal streak on side posterior to vertical bristles. Supracervical setae yellow. Prom-

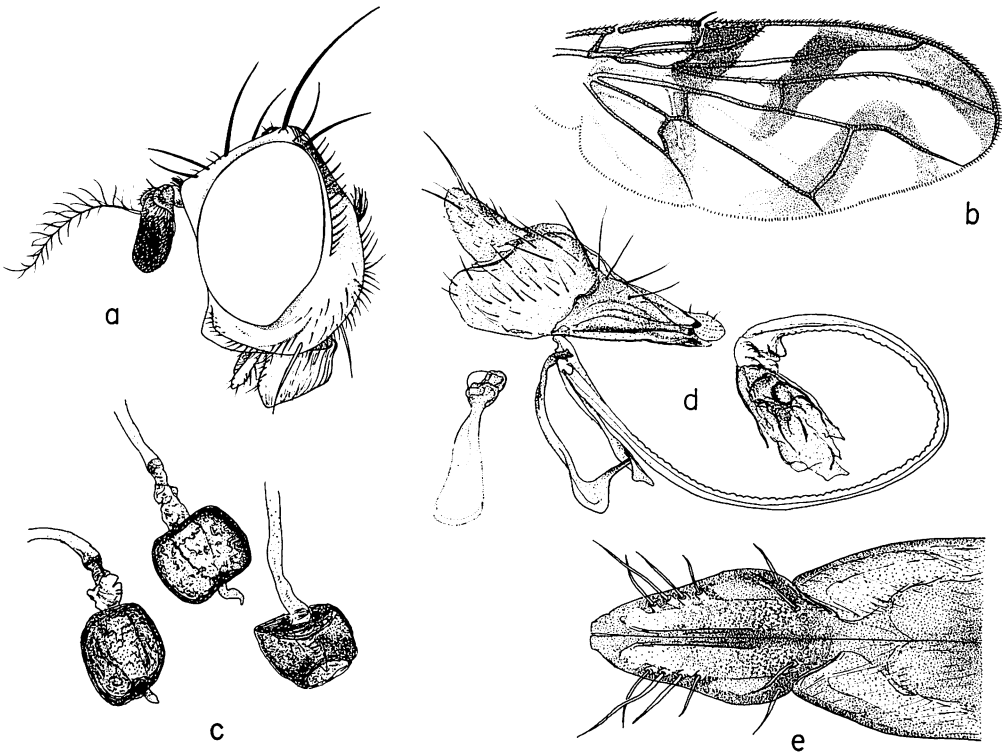


FIG. 59. *Paraphasca taenifera*: a, head; b, wing; c, ♀ spermathecae; d, ♂ genitalia; e, ♀ apex of piercer.

inent erect yellow setae scattered over back portion of occiput, 1 of these near lower margin bristlelike, ca. equal in size to genal bristle. Basal 2 segments of antenna yellow; 3rd segment brown, yellow at extreme base. Arista plumose, row of moderately long hairs along inner margin. *Thorax*. Yellow, conspicuous dark brown band across hind margin of mesonotum behind prescutellar bristles. Bristles as noted above under genus description except sternopleural and lower mesopleural bristles yellow. Pteropleural bristles strong, equal in size to meso- and sternopleurals. Scutellum bare, secondary bristles ca. $2/5$ as long as apical pair. *Legs*. Pale yellow, apical spur of mid tibia black, apical spinules yellow. Mid tibia with row of short posterodorsal bristles in middle of segment, 1 brown anteroventral at ca. apical $2/3$. *Wing*. Hyaline with following brown markings: faint streak across base in line with base of 2nd costal cell; dark brown band from subcostal cell across wing to vein Cu_{1+1stA} , evanescing in upper portion of anal cell; arc starting in upper median portion 1st M_2 through r-m crossvein to costa and costal margin into cells R_1 , R_3 , and upper apex of R_5 ; another arc beginning at apex of cell M_4 , across m crossvein into lower median portion of cell R_5 to costal margin at upper apex of cell 2nd M_2 (Fig. 59b). Third costal section ca. $3/5$ as long as 2nd. Vein R_{2+3} gently wavy, last sections of veins R_{4+5} and M_{1+2} moderately convex. Crossvein r-m near middle of cell 1st M_2 , lobe of cubital cell ca. $1/2$ as long as vein Cu_{1+1stA} . *Abdomen*. Yellow except 5th tergum broadly black at apex and on sides. Male genitalia as in Fig. 59d, cercus small, bearing 2 apical bristles, 10th sternum

with single large black tooth at apex. Ejaculatory apodeme unusually small, narrow (may be teneral although specimen dissected appears fully hardened).

Lengths: body 6.0–6.7 mm; wing 6.4–7.3 mm.

♀. As ♂ except terga 1–2 equal in length to terga 3–5. Third tergum brown on extreme lateral margin. Black on side of 4th and 5th, on apical margin of 4th, and basal margin of 5th. Sixth tergum tinged brown on extreme lateral margin. Basal segment of ovipositor yellow on basal 2/5, black on apex, large, almost 2× longer than wide, equal in length to terga 2–5. Piercer subacute at apex, preapical setae as in Fig. 59e. With 3 round or nearly quadrate spermathecae, each bearing slender nipple at apex (Fig. 59c).

Lengths: body 6.2–6.7 mm; wing 6.4–7.3 mm.

Holotype ♂ (BPBM 13,355), 1♀ paratype, PAPUA NEW GUINEA: upper Gumi, nr Bulolo, on *Bambusa*, 2.X.1979 (H. Roberts). Allotype ♀ (BPBM), 1♀ paratype, PAPUA NEW GUINEA: Gumi, nr Bulolo, on *Bambusa*, 23.III.1979 (Roberts). Paratypes: PAPUA NEW GUINEA: 1♂, 2♀, upper Manki logging area, nr Bulolo, 5000 ft [1524 m], 9–30.III.1973 (F.R. Wylie & P. Shanahan); 1♂, Okapa, 1900 m, 2.VI.1967, on *Cordyline terminalis* (G.A. Samuelson); 1♀, Kerowagi, 25.III.1964 (D.H. Colless); 1♂, Eastern Highlands Prov, Okapa, 31.XII.1964 (R. Hornabrook). Paratypes in ANIC, AMS, FRSB, and UH.

Etymology. The name combines the Latin words *taenia*, “band,” and *fero*, “to bear or carry,” and refers to the black band across the hind margin of the mesonotum, which is a dominant recognition character for the species.

Genus *Phasca* Hering

Phasca Hering, 1953, *Treubia* 21: 518. Type-species: *Phasca bidens* Hering, 1953 [= *Helomyza ortaloides* Walker, 1865], by original designation.

Phasca fits near *Diarrhegmoides* but differs by having long dorsal and ventral hairs on the arista (Fig. 60a) as well as moderately long hairs on the inner margins; dorsocentral bristles in line or slightly behind supraalars; a strong intrapostalar bristle on each side of the mesonotum directly in front of the basal scutellars; the hind tibia with 2 anteroventral and 6–10 anterodorsal bristles at the middle of the segment (these are lacking in *Diarrhegmoides*); and the lobe of cell Cu longer (Fig. 60b). Otherwise it fits the characters discussed under *Diarrhegmoides*.

Hering stated that the middle tibia of *Phasca* has 2 long apical spurs; the significance of this character is questionable. I am placing *Phasca* with the group of genera that has the outer spur distinctly shorter than inner. In *Phasca ortaloides* it is ca. 3/5 as long (Fig. 63c); in other species it is 1/2 or less.

Head shaped as in Fig. 60a. Face vertical in profile, not produced above oral margin, with median portion raised and antennal furrows long, extending to near lower margin of face. Usually 3 pairs inferior fronto-orbitals, sometimes only 2. Ocellar bristles setalike, usually ca. equal in length to setae of occipital row. Typically with 3 yellow to white longitudinal vittae down mesonotum, median vitta lacking in *P. maculifacies*, n. sp. Pale yellow to white vitta through median portion of each pleuron. Secondary scutellars 1/2–2/3 as long as apical bristles. Wing with 1 or 2 hyaline marks in cell R₁, and a hyaline arch and large wedge in posteroapical portion of wing (Fig. 60b). Vein R₁₊₂ gently to distinctly undulate. Vein R₄₊₅ strongly arcuate beyond r-m crossvein, vein M₁₊₂ gently convex beyond m crossvein. Crossvein r-m near apical 3/4 of cell 1st M₂, lobe of cell Cu ca. 2/3 as long as vein Cu_{1+1stA}. Costal spine strong.

Six species are placed here; the genus is apparently confined to the island of New Guinea. Nothing is known about host associations.

KEY TO SPECIES OF PHASCA

- 1. One hyaline wedge from costal margin through cell R₁ to beyond vein R₄₊₅ (Fig. 63d) 2
 With 2 hyaline wedges in cell R₁ (Fig. 61c) 3
- 2 (1). With complete prebasal hyaline band in wing; 3 pairs of inferior fronto-orbital bristles; vein R₂₊₃ distinctly undulate (Fig. 63d) **ortaloides**
 Not with complete prebasal crossband in wing; 2 pairs inferior fronto-orbitals; R₂₊₃ nearly straight (Fig. 64, 65) 5
- 3 (1). Mesonotum with yellow to white median vitta; face entirely white; propleura with black setae on anterior margin 4
 Mesonotum mostly black with broad gray pollinose vitta down middle; face with brown to blackish vitta down middle; propleura white setose **maculifacies, n. sp.**
- 4 (3). Subapical brown arch completely isolated from brown median marking except in cell M₄ (Fig. 60b); ♀ ovipositor as in Fig. 60f **bicunea, n. sp.**
 Subapical arch joined with median brown marking in cell R₅ above m crossvein (Fig. 61c); ovipositor as in Fig. 61e **connexa, n. sp.**
- 5 (2). Lower parafacials and upper genae brown to blackish, apex of palpus dark brown to black; wing with hyaline arch in apical 1/3 (Fig. 65) **trifasciata, n. sp.**
 Face, gena, clypeus and palpus entirely yellow; wing lacking hyaline arch in apical 1/3 (Fig. 64) **sedlaceki, n. sp.**

Phasca bicunea Hardy, new species

Fig. 60

Diagnosis. By having 2 hyaline marks in cell R₁ and 3 pale yellow to white vittae down the mesonotum, this species fits near *P. connexa*, n. sp. It is differentiated by the brown preapical arch in the wing that is isolated from the median brown marking except in the apex of cell M₄, a broad hyaline sub-basal band in the wing (Fig. 60b), and differences in the female ovipositors (Fig. 60f, 61a).

♂. *Head.* As typical for genus (Fig. 60a). With 3 pairs of strong, incurved inferior fronto-orbital bristles, ocellars rather well developed, ca. equal in size to lower inferior bristles. Front dark brown to blackish down median portion, occiput with broad, dark brown mark on side posterior to vertical bristles, connecting at back above cervix. Lower parafacials and upper gena dark brown to blackish, and with prominent row of black vibrissae. Sides of clypeus faintly tinged brown. Palpus rufous with faint tinge of brown at apex. *Thorax.* Mostly shining black, 2 white lateral vittae from humerus along side of mesonotum, slightly discolored with brown beyond level with intrapostalars, not connecting with white coloration of scutellum. Median white vitta gradually narrowed posteriorly, extending almost to hind margin of mesonotum. Basal margin of scutellum narrowly brown. Broad hyaline mark on side extending over median portion of pleura from propleuron, across metapleuron and pleurotergon, to metanotum. Secondary scutellars rather well developed, ca. 2/3 as long as apical bristles. *Legs.* Mostly yellow with mid and hind femora tinged brown, hind tibiae slightly tinged. Secondary spur of mid tibia ca. 2/3 as long as inner spur. *Wing.* As noted above and as in Fig. 60b. Vein R₂₊₃ gently curved. *Abdomen.* Subshining black, 1st tergum and apical margins of terga 2-4 pale yellow to cream-colored. Genitalia not dissected.

Lengths: body 6.75-7.5 mm; wing 7.0-8.0 mm.

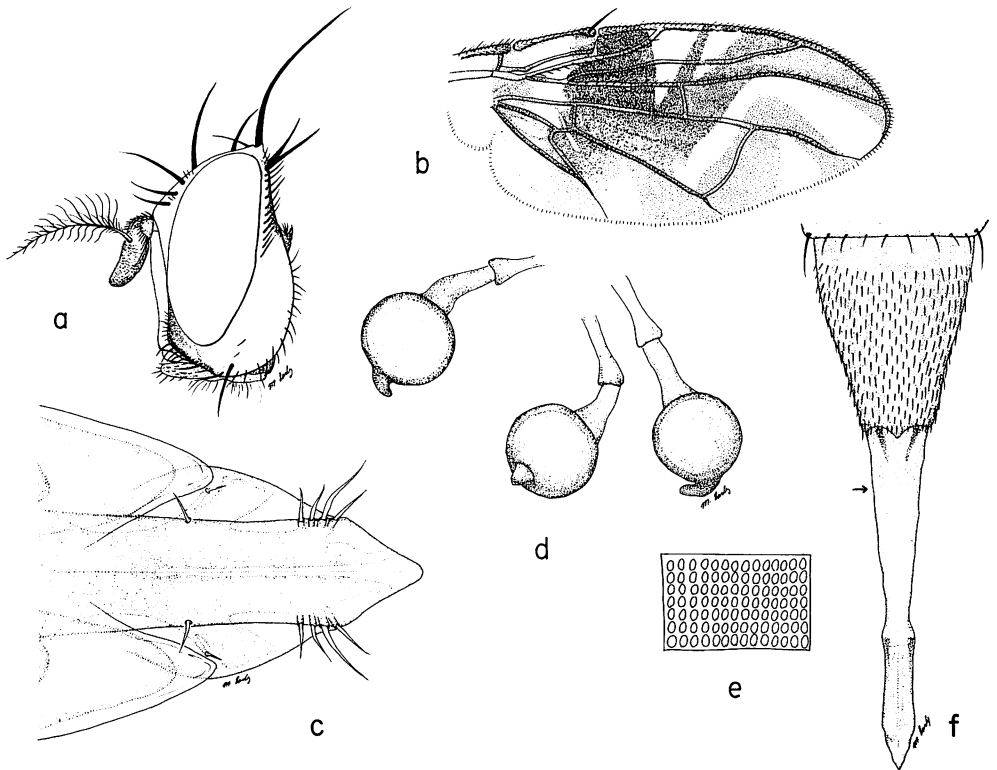


FIG. 60. *Phasca bicunea*: a, head; b, wing; c, ♀ apex of piercer; d, ♀ spermathecae; e, scales on 8th segment; f, ♀ ovipositor.

♀. As ♂ except all femora dark brown to blackish, mid and hind tibiae brown to black; yellow to white apical borders on terga 2-6. Basal segment of ovipositor dark brown to blackish, comparatively short, ca. 1/2 longer than wide, ca. equal in length to terga 2-6. Piercer rather short, thick, tapered to point at apex (Fig. 60f). With egg guides ending preapically, ca. 1/6 distance from apex (Fig. 60c). Eighth segment with small oblong scales on dorsomedian portion (Fig. 60e). Spermathecae nearly round with small apical nipples (Fig. 60d).

Lengths: body 5.0-5.5 mm, excluding ovipositor; wing 5.3-5.75 mm.

Holotype ♂ (BPBM 13,356), 1♂ paratype, PAPUA NEW GUINEA: Robbies Crk, nr Bulolo, on *Bambusa* leaf, 22.VII.1979 (H. Roberts). *Allotype* ♀ (BPBM), 1♀ paratype, same locality and collector as holotype, VIII.1979, under wild banana leaf. 3♂, 2♀ paratypes with following data: PAPUA NEW GUINEA: Morobe Prov, Bulolo, 700 m, XI.1982 (M.J. Parsons); Kaisenik, nr Bulolo, 20.I.1979 (Roberts); Bulolo, 700 m, 26.XI.1969 & 16.I.1970 (J. & M. Sedlacek); Torricelli Mts, Mokai Vill, 750 m, 1-23.I.1959 (W.W. Brandt). Paratypes in BPBM, FRSB, and UH.

Etymology. The name combines the Latin words *bi*, "2," and *cuneus*, "wedge," and refers to the presence of 2 hyaline wedges in the middle of the costal margin.

***Phasca connexa* Hardy, new species**

Fig. 61

Diagnosis. This species fits near *P. bicunea* by having 2 hyaline marks in cell R_1 and 3 yellow to white longitudinal vittae on the mesonotum. It differs by having the sub-apical brown arch joined in cell R_5 above the m crossvein, and the brown markings in base of cell R extending above vein M nearly connecting with the brown median marking (rather than with a broad prebasal hyaline crossband). The characters of the female ovipositor are distinctly different (see Fig. 60c, 61e and description below).

Ocellar bristles setalike, smaller than setae in occipital row. Type ♂ with 4 pairs of inferior fronto-orbitals (aberrant). Base of ovipositor dark brown to blackish, ca. 2× longer than wide, ca. equal in length to remainder of abdomen. Piercer (Fig. 61e) with dorsal flaps, egg guides, ending at ca. apical 3/4 of segment. Scales on dorsomedian portion of 8th segment comparatively large, ca. 3–4× longer than wide (Fig. 61b).

Lengths: body and wings each 6.4–6.8 mm.

Holotype ♂, PAPUA NEW GUINEA: Torricelli Mts, Mobitei, 750 m, 16–22.IV.1959 (W.W. Brandt) (BPBM 13,357). **Allotype** ♀ (BPBM), Torricelli Mts, Mokai Vill, 750 m, 1–23.I.1959 (Brandt). 4♂, 1♀ paratypes: 1 same data as allotype; 2, Torricelli Mts, Sugoitei Vill, 900 m, 1–5.II.1959 (Brandt); IRIAN JAYA: 1, Waris, S of Hollandia, 450–500 m, 27–30.VII.1959 (T.C. Maa); 1, Genjam, 40 km W of Hollandia, 100–200 m, 1–10.III.1960 (Maa). Paratypes in BPBM and UH.

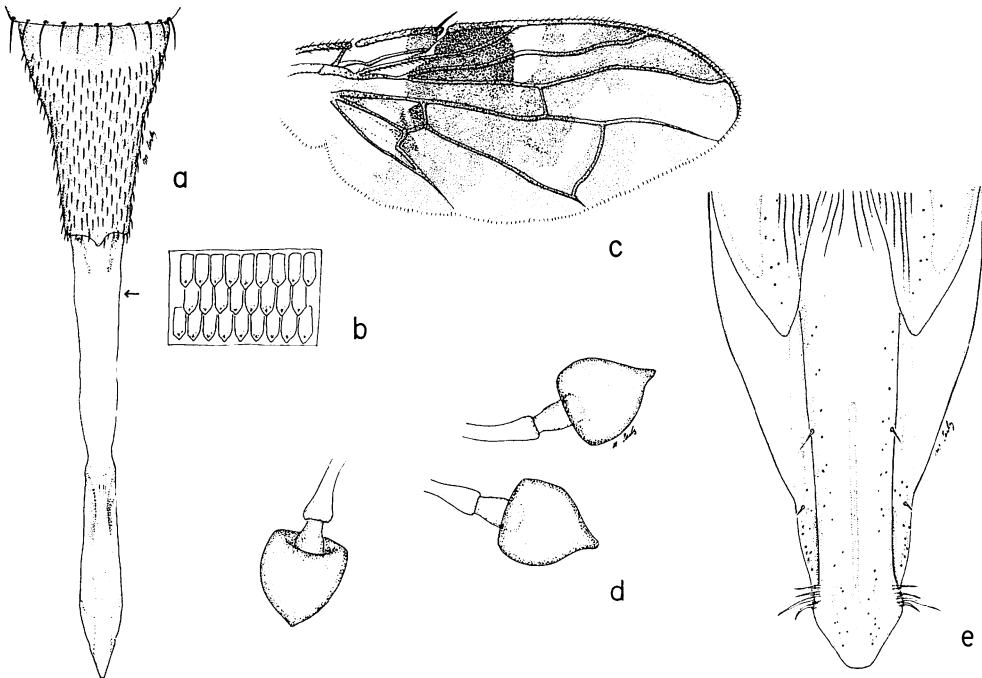


FIG. 61. *Phasca connexa*: a, ♀ ovipositor; b, scales on 8th segment; c, wing; d, ♀ spermathecae; e, ♀ apex of piercer.

Etymology. The name comes from the Latin *connexus*, "joined," and refers to the brown coloration through the middle of the wing.

***Phasca maculifacies* Hardy, new species**

Fig. 62

Diagnosis. This species fits in the species group characterized by having 2 hyaline marks in cell R_1 . It differs from its congeners by having the mesonotum shining black except for white lateral vittae, a broad gray pollinose vitta extending down middle; face with a longitudinal discoloration of brown to black down middle; the wing typically with the preapical hyaline arch interrupted by brown in cell 1st M_2 (Fig. 62e); and the propleuron entirely white setose. In other species of *Phasca*, a row of black bristlelike setae is present on the front margin.

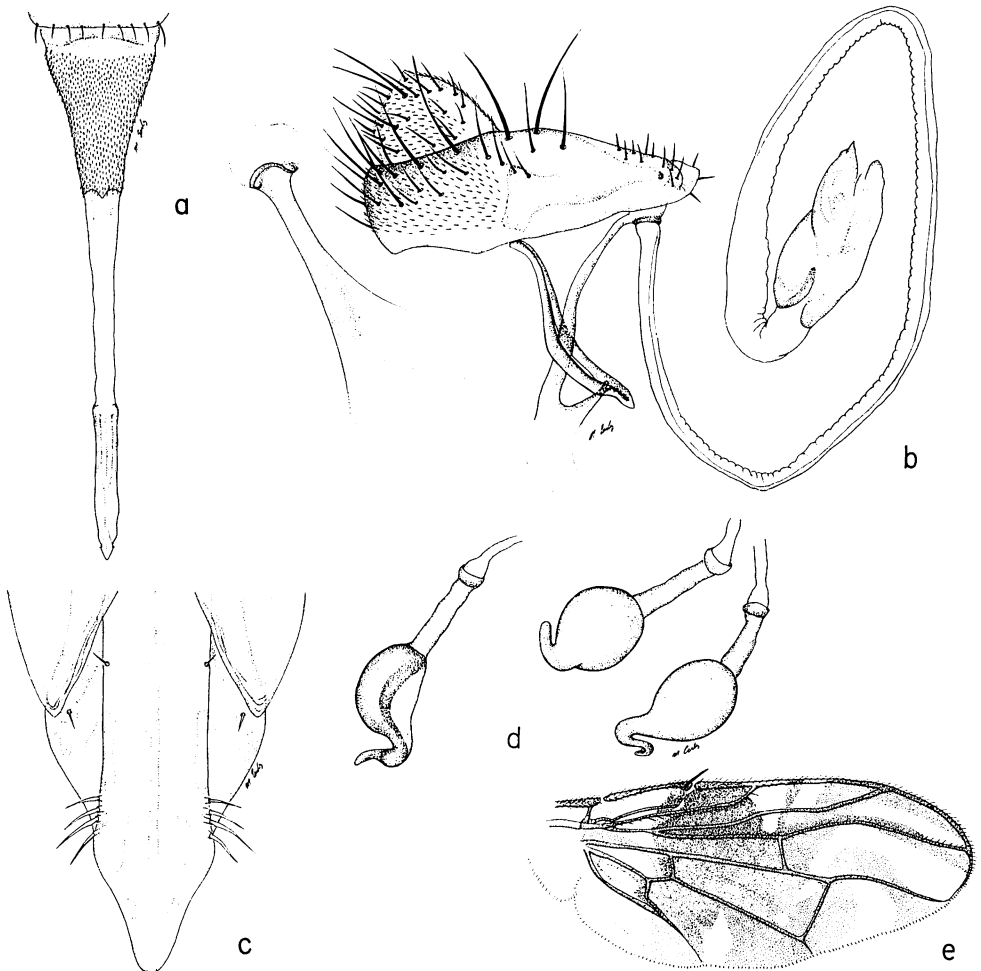


FIG. 62. *Phasca maculifacies*: a, ♀ ovipositor; b, ♂ genitalia; c, ♀ apex of piercer; d, ♀ spermathecae; e, wing.

♂. *Head*. Shaped as in other species of genus, 3 pairs strong inferior fronto-orbitals, ocellars equal or slightly longer than occipital setae. *Thorax*. As noted in diagnosis above, white lateral vitta extending from humerus continuous with white scutellum except for faint discoloration of brown behind intrapostalar bristles. Basal margin of scutellum brown. White vitta on pleura extending diagonally from lower portion of propleuron across middle of mesopleuron and upper portion of pteropleuron to wing base. Metapleuron and pleurotergite reddish brown, pale coloration along upper margins. *Legs*. Yellow with tinge of brown on hind coxae, femora, and tibiae. *Wing*. As noted above and as in Fig. 62e. Prebasal hyaline crossband (almost interrupted by brown mark in base of cell R) extending along upper portion of vein M. Third costal section ca. 2/3 as long as 2nd. Vein R₂₊₃ distinctly undulate, 4th costal section ca. equal in length to 5th. Crossvein r-m near apical 1/4 of cell 1st M₂. *Abdomen*. Entirely shining black, lightly gray pollinose, narrow apical margin of 4th tergum pale yellow in ground color, obscured by gray pollen. Genitalia (Fig. 62b) with cercus rather short, < length of epandrium, 2 prominent apical setae. Surstylus gradually narrowed apically, large blunt tooth apparent on 10th sternum. Ejaculatory apodeme small.

Lengths: body 7.0–7.5 mm; wing 7.25–7.75 mm.

♀. As ♂ except narrow bases of terga 1 and 2 white, narrow apicomedian margin of 4th tergum white, white on apical 1/2 of 5th and all of 6th. Basal segment of ovipositor large, dark brown to black (Fig. 62a), ca. 2× longer than wide, equal in length to remainder of abdomen. Piercer with 4 pairs of subequal preapical setae (Fig. 62c). Spermathecae with prominent apical nipples (Fig. 62d).

Lengths: body, excluding ovipositor, 6.5 mm; wing 7.0 mm.

Holotype ♂, PAPUA NEW GUINEA: Eastern Highlands, Aiyura, 1800–1900 m, 6.I.1965 (J. & M. Sedlacek) (BPBM 13,358). *Allotype* ♀ (BPBM), PAPUA NEW GUINEA: Morobe Prov, Wau, Mt Missim, 1600 m, 23.VII.1978, primary forest understory (W.C. Gagné). 16♂, 15♀ paratypes with following data: PAPUA NEW GUINEA: same as allotype; Bismarck Range, Simbai, 1700 m, 28.V.1966 (J.L. & M. Gressitt); Morobe Prov, Lake Trist, 1600 m, 21–26.X.1966 (G.A. Samuelson); Karimui, 6.VI.1961 (Gressitt & Gressitt); Western Highlands, Goiburung, E of Korn Farm, 1560–1650 m, 16.X.1958 (J.L. Gressitt); Kassam, 48 km E of Kainantu, 1350 m, 7.XI.1959 (T.C. Maa); Finisterre Range, Saider, Kiambavi, 22–29.VII.1958 (W.W. Brandt); U Watut SW, 1100–1600 m, 30.IV.1968 (Gressitt); 22 km SE of Okapa, 2100 m, 28.VIII.1964 (J. & M. Sedlacek); Kassam Pass, 1500 m, 14–20.XI.1967 (P. Colman); upper Manki logging area, nr Bulolo, 16–23.III.1973, 5000 ft (F.R. Wylie & P. Shanahan); Gumi and upper Gumi, nr Bulolo, on *Bambusa*, 27.VII.1979 (H. Roberts). Paratypes in BPBM, AMS, FRSB, and UH.

Remarks. A few specimens on hand have the preapical hyaline arch in the wing complete, and the basad arm continuous from vein R₄₊₅ through cells R₅ and 1st M₂ to vein M₃₊₄ (apparently an aberration).

Etymology. The name combines the Latin *macula*, “mark” or “stain,” with *facies*; it refers to the discoloration down the middle of the face. The word is used as a noun in apposition.

Phasca ortaloides (Walker)

Fig. 63

Helomyza ortaloides Walker, 1865: J. Proc. Linn. Soc. Lond., Zool. 8: 116. Type-locality: New Guinea. Type ♂ in BMNH.

Phasca bidens Hering, 1953, Treubia 21: 519. Type-locality: Sorong, Irian Jaya. Type ♂ in RNHL. Synonymy by Hardy (1966: 665).

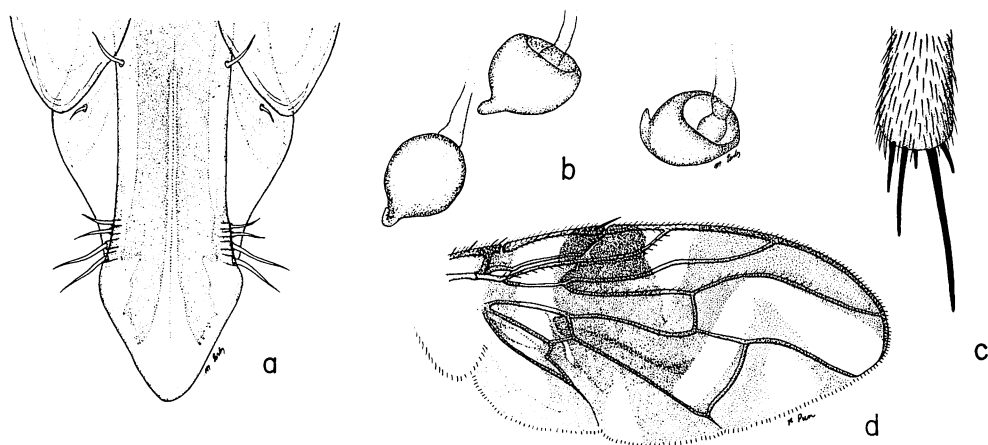


FIG. 63. *Phasca ortalooides*: a, ♀ apex of piercer; b, ♀ spermathecae; c, apex of mid tibia; d, wing.

Diagnosis. The wing markings of *ortalooides* are remarkably similar to those of species of the genus *Xenosophira* Hardy but the resemblance is superficial as these 2 genera are not related; *Xenosophira* fits in the Gastrozonina. By having only 1 hyaline wedge in the middle of the anterior margin of the wing, *P. ortalooides* fits near *P. trifasciata*, n. sp. It differs by having a broad, prebasal hyaline band extending across the wing; 3 pairs of inferior fronto-orbital bristles moderately well developed, equal in size to setae of the occipital row; apex of the mid tibia as in Fig. 63c; and vein R_{2+3} distinctly undulate (Fig. 63d).

Female abdomen mostly shining black, yellow to rufous on 1st tergum, yellow-white on apices of terga 2-5, 6th tergum pale yellow-white. Basal segment of ovipositor dark brown to black, equal in length to remainder of abdomen. Apex of piercer as in Fig. 63a. Spermathecae nearly semicircular with prominent nipples at apex (Fig. 63b). Otherwise fits description of *trifasciata*.

Lengths: body 6.0-6.5 mm; wing 7.0-7.5 mm.

Distribution. Island of New Guinea.

Specimens examined. Holotypes of both taxa. 1♂, 1♀ labeled "New Guinea" in TMB. PAPUA NEW GUINEA: 1 (sex?) abdomen missing, Morobe Prov, Arabuka, 15-2000 m, 7.I.1968 (J. & M. Sedlacek); 1♂, Rouku, IV-V.1962 (W.W. Brandt). IRIAN JAYA: 1♀, Eramboe, 80 km Merauke, 5.II.1960 (T.C. Maa).

Remarks. It is possible *P. bidens* Hering may be a distinct species. The type male of *bidens* has the preapical hyaline arch interrupted with brown at the top portion of the convexity and in cell 1st M_2 (cf. Hering 1953: 517, Fig. 7). It will be necessary to study more material to know whether or not this is an aberration. Until then, it is provisionally placed here as a junior synonym of *P. ortalooides*.

***Phasca sedlaceki* Hardy, new species**

Fig. 64

Diagnosis. This species fits near *P. trifasciata*, n. sp., by having only 1 hyaline wedge in cell R_1 , by lacking a complete prebasal hyaline band in the wing, and by having 3

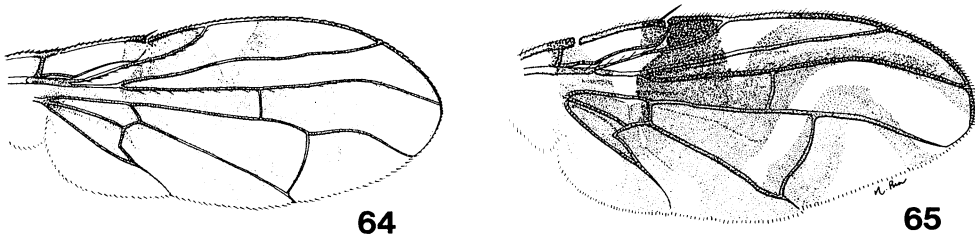


FIG. 64-65. 64, *Phasca sedlaceki*, wing. 65, *Phasca trifasciata*, wing.

pale yellow longitudinal vittae on the mesonotum. It differs by having the face, gena, clypeus, and palpus entirely yellow, and by lacking a hyaline arch in the apical 1/3 of wing.

♂. Hyaline wedge from lower apex of cell R_5 ending at vein R_{4+5} ; isolated hyaline subapical mark across cell 2nd M_2 ; hyaline round preapical spot near lower margin of cell 1st M_2 (remnant of arch present in *trifasciata*); also hyaline wedge in cell R_1 not extending to vein R_{4+5} , rather than extending across vein into cell R_5 and propleura entirely pale haired, lacking black setae on front margin. Otherwise fits description of *trifasciata*. Wing venation and markings as in Fig. 64.

Lengths: body and wing each 4.4 mm.

♀. Unknown.

Holotype ♂, PAPUA NEW GUINEA: Wau, Bulolo Riv, 18.I.1970 (J.H. Sedlacek) (BPBM 13,359).

Etymology. The species is named after Joseph H. Sedlacek, whose extensive collections throughout Papua New Guinea have added greatly to our knowledge of the insect fauna of that region.

Phasca trifasciata Hardy, new species

Fig. 65

Diagnosis. By having only 1 hyaline wedge in the middle of the anterior margin of the wing, this species fits near *P. ortalooides* (Walker). It is readily differentiated by the lack of a prebasal hyaline crossband in the wing, by the dark brown coloration continuous through cells M_4 and Cu, by the almost straight vein R_{2+3} (Fig. 65), and by the presence of only 2 pairs of inferior fronto-orbital bristles.

♂. *Head*. Shaped as typical for genus. Ocellar bristles tiny, setalike. Front tinged brown down median portion. Occiput with broad brown band extending from behind vertical bristles to cervix. Lower parafacials and upper gena brown to blackish, side of clypeus and apex of palpus dark brown to black. Antenna rufous, tinged brown to blackish on apical portion of 3rd segment. Two pairs inferior fronto-orbital bristles on lower 1/4 of front. *Thorax*. Largely shining black with white vittae, as characteristic of species group that has 3 vittae on mesonotum. Pleural vitta extending to wing base and metapleura, pleuroterga brownish yellow. Propleuron with row of moderately strong black hairs on anterior margin. Secondary scutellars ca. 3/5 as long as apical bristles. *Wing*. As noted above and as in Fig. 65. *Legs*. Yellow, mid and hind coxae and femora brown to blackish. Outer spur of mid tibia ca. 1/2 as long as inner. *Abdomen*. Mostly shining black, yellow on dorsum of terga 1-2, yellow-white on posterior borders of terga 2-4.

Lengths: body 5.25–6.0 mm; wing 6.0–6.75 mm.

♀. Unknown.

Holotype ♂ (BPBM 13,360), 2♂ paratypes, PAPUA NEW GUINEA: Central Prov, Iomari Crk, nr Brown Riv, 20.IX.1981 (T.C. Maa). 2♂ paratypes, IRIAN JAYA: Eramboe, 80 km from Merauke, 5.II.1960 (Maa). Paratypes in BPBM, DPIK, and UH.

Etymology. The name combines the Latin words *tri* “3,” and *fasciatus* “stripe”; it refers to the 3 yellow longitudinal vittae on the mesonotum.

Genus *Polyara* Walker

Polyara Walker, 1859, J. Proc. Linn. Soc. Lond., Zool. 3: 122. Type-species: *Polyara insolita* Walker, 1859, by original designation.

This strange genus is readily differentiated from other Acanthonevrini by the unusual wing venation. It is unique in having spur-veins on R_{2+3} dividing cells R_1 and R_3 ; a crossvein connecting veins R_{2+3} and R_1 near apex of the latter; 2 spurs on the underside of R_{2+3} before and after r-m almost connecting with vein R_{4+5} ; 1 or more short spurs on the underside of the 1st section of vein M_{1+2} ; vein M_{1+2} strongly bent upward before apex, sharply narrowing the apical portion of cell R_5 (Fig. 66b).

Head broad, wider than thorax, front wider than long. Antenna rather short, 1/2 or less length of face, distinct space separating bases. Front densely short setose. Face broad, flattened area down middle, antennal furrows well developed. Ocellar bristles moderately developed, ca. equal in size to postocellars. Two strong reclinate superior fronto-orbitals, 1 pair incurved inferior fronto-orbitals (Fig. 68c) (plus 1 or more extra bristlelike hairs in *P. bambusae*). Thorax with following bristles: 1 humeral, 1 presutural, 1 notopleural, 1 supraalar, 2 postalar, 1 intrapostalar, 1 dorsocentral, 1 prescutellar, 2 or 3 mesopleurals, 1 sternopleural, 1 pteropleural, and 6 strong scutellars. Scutellum bare on disc. Only veins R_1 and R_{4+5} setose above, cubital cell with long slender sharp-pointed lobe (Fig. 68a). Female ovipositor very elongate, equal or longer than remainder of body (Fig. 66a). Male genitalia rather small, inconspicuous; cercus well-developed; aedeagus unusually long, coiled; fused vanes on aedeagal apodeme short; surstylus moderately short, lobe of 10th sternum well developed, exposed (Fig. 67b).

Three species are known; all probably breed in young shoots of bamboo.

KEY TO KNOWN SPECIES OF *POLYARA*

1. Apex of wing entirely brown (Fig. 68a); face all yellow 2
 Apex of wing mostly hyaline, mottled with brown (Fig. 66b); upper median portion of face between antennae velvety black; black spot on side of eye orbits opposite base of antenna . . . (Papua New Guinea) *bambusae*, n. sp.
 2. Wing with complete broad transverse brown band covering r-m and m crossveins; cells 1st M_2 and M_4 subhyaline except apices; no spur veins on M_{1+2} (Fig. 68a); front scarcely wider than eye; intrapostalars and secondary scutellars weak, hairlike . . . (Papua New Guinea) *leptotrichosa*, n. sp.
- Wing lacking preapical brown crossband; brown band extends along most of length of vein M_{3+4} ; cell 1st M_2 with a few incomplete transverse streaks of brown; antepenultimate section of vein M_{1+2} with 1 or 2 short ventral spur veins (Fig. 67a); head broad, front over 2× wider than eye; intrapostalar and secondary scutellar strong . . . (Maluku; New Guinea) *insolita*

Polyara bambusae Hardy, new species

Fig. 66

Diagnosis. *Polyara bambusae* differs from *insolita* by having the upper median portion of the face between the antennae velvety black and a black mark on each side of the eye orbits opposite bases of the antennae; the face less broad (measured just below the antennae), ca. equal to width of 1 eye, upper portion raised into a narrow keel between the antennae; the 3rd antennal segment ca. 2× longer than wide, extending ca. 1/2 length of the face; and the lower superior fronto-orbital bristles and 1 pair of strong inferior fronto-orbitals at middle of the front, almost cruciate, plus 2 or 3 black bristle-like hairs extending in a row to the anterior margin. The wings have a very narrow border of brown around the apex, with irregular markings of brown in the apical portion beyond a level with the m crossvein and 4 to 5 narrow brown lines across cell 1st M₂; vein M₁₊₂ has 4 short ventral spurs before the m crossvein (Fig. 66b).

♂. *Head.* Yellow except for velvety marks mentioned above and dark colored eyes and ocellar triangle. In lateral view ca. 1/3–1/4 higher than long, in dorsal view 2× wider than long. Antennal furrows, raised median portion of face, palpus, and mouthparts pale yellow, orbits and gena opaque golden yellow. Median portion of face rather abruptly tapered from anterior to posterior margins. Superior fronto-orbitals on upper 1/2 of front. One pair inferior fronto-orbitals and 3 black bristlelike hairs on lower 1/4 of front. Ocellars moderately strong, equal in size to postocellars. Front with abundant erect black setae on middle part, ca. equal in size to setae on gena. *Thorax.* Mostly yellow, pleura mottled brown, 4 narrow brown vittae extending down mesonotum, metanotum shining dark brown to black; entire thorax densely gray pollinose, almost obscuring ground color. Dorsocentral bristles slightly in front of level halfway between supraalar and inner postalar bristles. Strong intrapostalar present on side near posterior margin of mesonotum in front of scutellum just posterior to prescutellar bristles. Scutellum bare except a few short, black setae on side, secondary scutellars ca. 3/4 as long as basal bristles. *Wing.* Markings and venation as in Fig. 66b. Costal bristles undeveloped, indiscernible. Third costal section between apices of veins Sc and R₁ subequal in length to 2nd costal section. *Legs.* Yellow. Mid tibia with 2 short equal spines at apex plus numerous short black spinules, 3 short black posterior bristles near middle of segment, 1 short dorsal bristle near apical 4th. *Abdomen.* Predominantly brown to blackish in ground color, gray pollinose, yellow vitta down median portion from base to apex of 4th tergum, continuing 2/3 length of 5th as narrow line down middle. Genitalia inconspicuous except for porrect cercus, lobe with prominent black bristle at apex. Genitalia not relaxed for study.

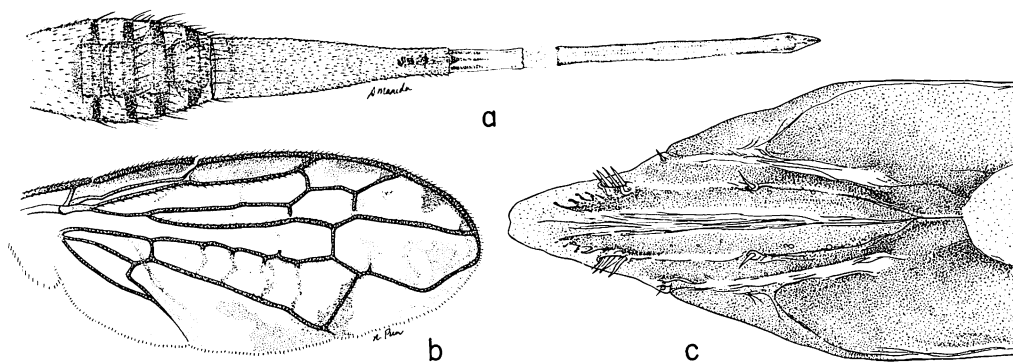


FIG. 66. *Polyara bambusae*: a, ♀ ovipositor; b, wing; c, ♀ apex of piercer.

Lengths: body 8.4 mm; wing 7.6 mm.

♀. As ♂. Yellow median vitta of abdomen extends from base to apex of 6th tergum. Ovipositor base entirely dark brown to black, considerably longer than remainder of abdomen. Extended ovipositor (Fig. 66a) measures 8.5–9.0 mm. Apex of piercer as in Fig. 66c.

Lengths: body 7.5 mm, excluding ovipositor; wing 8.0 mm.

Holotype ♂ (BPBM 13,361), allotype ♀ (BPBM), PAPUA NEW GUINEA: upper Stony logging area, nr Bulolo, 19.XII.1979 (H. Roberts). 6♀,4♂ paratypes, PAPUA NEW GUINEA: 2, same loc. and collector as holotype, 23.IV.1979, reared from bamboo; 3, Bulolo (C.E.M. Gunther & F.H. Taylor) [specimens recorded as *insolita* by Malloch (1939a: 418)]; 2, Robbies Crk, nr Bulolo, 15.VIII.1979 (Roberts); 1, Morobe Prov, Wau, 1200 m, XII.1967 (M. Sedlacek); 1, Mt Missim, nr Wau, 900 m, no date (J. & M. Sedlacek); 1, Umboi, Lab Lab, 0–10 m, 6–7.II.1967 (G.A. & S.L. Samuelson, P.H. Colman). 1 paratype BPBM, others FRSB, BMNH, AMS, CHIS, USNM, and UH.

Biology. Dr Roberts (in litt.) reports that he has reared this species from “young shoots of living *Bambusa*. The larvae tunnel within the stems of young shoots causing the death of the newly opened leaves.”

Remarks. This species was described and figured by Malloch (1939a: 418) as *P. insolita* Walker. It fits Walker’s original description and also my redescription of the type (Hardy 1959: 191). Three species of *Polyara* are now known and I have had the type series of *insolita* rechecked by Audrey Smith (UMO) and Brian Cogan (BMNH) to confirm its distinctive features.

Etymology. The species name comes from the host plant, *Bambusa*.

Polyara insolita Walker

Fig. 67

Polyara insolita Walker, 1859. J. Proc. Linn. Soc. Lond., Zool. 3: 123. Type-locality: Aru Island, Maluku.

Type ♂ in UMO. 1♂ and 1♀ from Mysol in BMNH.

Diagnosis. *Polyara insolita* is most closely related to *P. leptotrichosa*, n. sp., and differs by the characters given in the key and discussed under the latter species. It differs

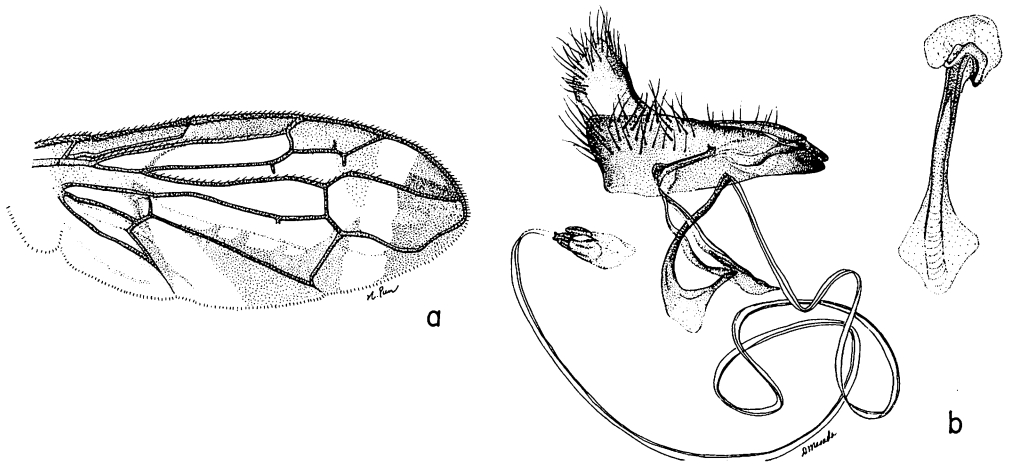


FIG. 67. *Polyara insolita*: a, wing; b, ♂ genitalia.

from *P. bambusae*, n. sp., by having the face and orbits entirely yellow; the head very broad, 2× wider than long and distinctly wider than thorax; the front 2× wider than eye; the face broad, ca. 2× wider than eye; the upper face broad, flat between antennae; the antennal bases widely separated by ca. width of scape (as Ditrichini, Tephritinae), antennae ca. 2/5 length of face, 3rd segment ca. 3× longer than wide; the superior fronto-orbitals close together on upper 3rd of front, 1 pair of very weak inferior fronto-orbitals near lower margin of front; a large brown mark filling apex of wing; vein M_{1+2} with 2 spurs on the underside before m crossvein, no lines of brown across cell 1st M_2 ; and the upper portion of cell M_4 with a broad brown mark along vein M_{3+4} , continuous with a broad yellow-brown band extending across m crossvein (Fig. 67a).

An entirely yellow to rufous species, slight tinge of brown on abdominal terga. Front densely covered with short dark-colored setae, 2nd antennal segment densely spiculate on dorsal portion. Raised portion of face at its widest point ca. equal in width to combined lengths of 2nd and 3rd antennal segments. Orbit along side of face golden yellow, rather velvety in appearance. Intrapostalar and secondary scutellar bristles strong. Cercus of ♂ porrect from tip of abdomen, conspicuous in situ. Genitalia (Fig. 67b) with vanes of aedeagal apodeme fused. Female ovipositor very elongate, basal portion ca. equal in length to remainder of abdomen plus thorax. Piercing structure not studied.

Lengths: body 12.4–13.7 mm; wing 10.5–11.5 mm.

Distribution. Maluku and island of New Guinea.

Specimens examined. 4♂ with following data. PAPUA NEW GUINEA: Western Prov, Goraita, 21.VIII.1972, in rain forest (J. Stibick); Anga Gorge, E of Mendi, 14.X.1958 (J.L. Gressitt). IRIAN JAYA: Bodem, 11 km SE of Oerberfaren, 100 m, 7–17.VII.1959 (T.C. Maa).

Remarks. Osten Sacken (1881: 418) recorded this species from Ramoi and Dorey, New Guinea. I do not know which *Polyara* species he had. The records of Malloch (1939a: 418) from Bulolo pertain to *bambusae*, n. sp.

Polyara leptotrichosa Hardy, new species

Fig. 68

Diagnosis. This species is related to *P. insolita*; it differs by having the head less broadly expanded, with the front scarcely wider than width of the eye; the intrapostalar

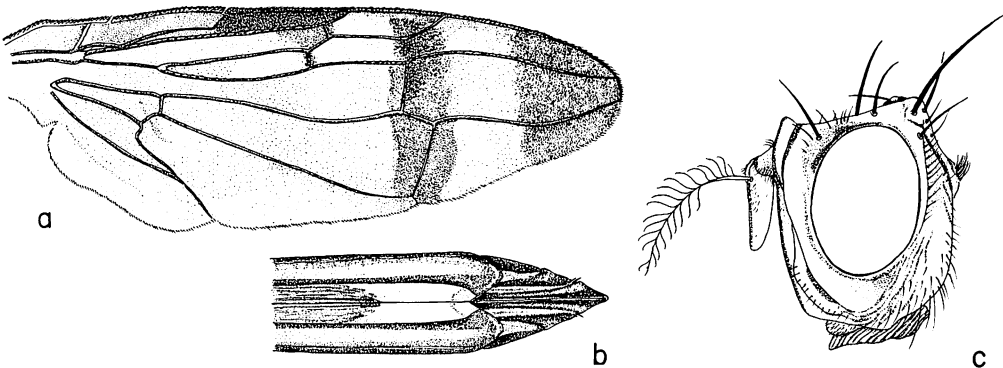


FIG. 68. *Polyara leptotrichosa*: a, wing; b, ♀ apex of piercer; c, head.

and secondary scutellar bristles weak; a complete brown transverse band covering r-m and m crossveins; cells 1st M_2 and M_{3+4} subhyaline except at apices; and vein M_{1+2} lacking spur veins (Fig. 68a).

♂. Yellow to rufous except for compound eyes, ocellar triangle, small black spot on side of mesonotum behind wing base, and thin blackish discoloration along edge of postscutellum. *Head*. About 1/3 higher than long, subquadrate, front horizontal, face vertical, very gently receding toward oral margin. Gena broad, height equal to ca. 1/2 eye height. One pair inferior fronto-orbital bristles near lower margin of front, 2 pairs superior fronto-orbitals on upper 2/5 (Fig. 68c). Ocellar bristles well developed, subequal in size to postocellars. Interfrontal area with numerous erect black setae. Front shining, face opaque. Raised median portion of face flat in middle, narrow compared to *P. insolita*, at widest point width < length of 3rd antennal segment. Upper median portion of face continuing as a broad flat bridge connected with lunule and widely separating bases of antennae. Antenna near upper margin of head, slightly below level of front. Third antennal segment narrowed apically, slightly over 1/2 length of face. Arista long plumose, with row of short hairs along inner surface. Supracervical setae dark brown to black, setae of posterior portion of occiput yellow to brownish yellow. *Thorax*. As in the congeners, except for weak intrapostalars and secondary scutellars. Scutellum subshining yellow, completely bare, with 4 strong bristles. Dorsocentral bristles ca. halfway between supraalar and postalar. *Legs*. As in congeners, entirely yellow. *Wing*. Mostly yellowish fumose, yellow-brown in 1st 2 costal sections, brown in 3rd section (cell Sc), with broad preapical band of brown on areas of r-m and m crossveins, apex broadly brown (Fig. 68a). Third costal section slightly longer than 2nd, 4th section ca. 2/5 as long as 3rd. Venation (Fig. 68a) similar to that of *P. insolita*. *Abdomen*. Rufous, brownish yellow setose on terga 3-5. First 2 terga equal in length to 3+4, 6th tergum subequal in length to 3+4. In dorsal view abdomen almost straight sided, slightly expanded posteriorly. Genitalia not relaxed for study, in situ appearing as in *insolita*.

Lengths: body 12.0 mm; wing 10.0 mm.

♀. As ♂; except intrapostalars present, ca. 2× longer than longest setae on posterior portion of mesonotum. Secondary scutellar bristle on right side of scutellum, ca. 1/2 length and width of basal scutellars, evidence of weak socket present on left side. Basal segment of ovipositor elongate, almost equal in length to remainder of body; extended ovipositor nearly 2× longer than remainder of body. Piercer tapered to sharp point at apex (Fig. 68b).

Lengths: body, without ovipositor, 10.6 mm; basal segment of ovipositor 9.6 mm; extended ovipositor 18.4 mm; wings 12.0 mm.

Holotype ♂ (BPBM 13,362), allotype ♀ (BPBM), PAPUA NEW GUINEA: Bulolo, Manki logging area, 25.II.1983, on leaves of *Bambusa* (H. Roberts). 1♂, 1♀ paratypes, same data (FRSB & UH).

Remarks. The intrapostalar bristles on the holotype are broken off and the bristle sockets are small, indicating small hairlike bristles were present. Secondary scutellars are completely missing. I see no evidence of sockets.

Etymology. The specific epithet combines the Greek words *leptos*, "small, fine, weak," and *trichos*, "hair." It refers to the weak intrapostalar and secondary scutellar bristles.

Genus *Pseudacanthoneura* Malloch

Pseudacanthoneura Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 434. Type-species: *Pseudacanthoneura septemnotata* Malloch, 1939 [= *Acanthoneura sexguttata* de Meijere, 1913], by original designation.

The typical species of this genus keys near *Pseudoneothemara*, n. gen., by having vein Cu setose, the node of vein R and M_{3+4} bare, 6 strong scutellars, and strong pteropleural and intrapostalar bristles. *Pseudacanthoneura* is not related to *Pseudoneothemara* and differs by having strong ocellar bristles; the thorax rufous except for a few small black spots on the dorsolateral margins; the wings brownish yellow with numerous small subhyaline spots (Fig. 69c, 70) and veins R_{2+3} and R_{4+5} distinctly wavy.

An aberrant species, *P. aberrans*, n. sp., has vein Cu bare and fits near *Neothemara* by having the face vertical, receding at oral margin. It differs by having the scutellum bare, not setose; the ocellar bristles strong, equal in size to upper superior fronto-orbital bristles, not setalike; the thorax and wings very differently marked; and other differences as given in descriptions.

Yellow, some small brown to black spots on thorax, brownish discoloration on abdomen and metanotum. Head higher than long, front gently sloped. Face vertical, receding at oral margin, antenna near upper 1/3 of head (Fig. 69d). Two pairs each of strong superior and inferior fronto-orbitals, former on upper 1/2 of front, latter approximate on lower 1/4-1/3 of front. Face raised in median portion, narrowed into thin keel between bases of antennae, flattened on lower portion in frontal view. Antenna 1/3-2/5 length of face. Arista long plumose, longest hairs almost as long as 3rd antennal segment, row of moderately long hairs on inner margin. Thorax with usual complement of bristles including strong intrapostalars and 6 strong scutellars, lacking secondary supraalars. Dorsocentral bristles ca. halfway between supraalars and postalars. Secondary spur of mid tibia 2/3 as long as main spur. Mid and hind femora each with row of erect black bristlelike setae along median portion of posterior surface, another on posteroventral surface. Hind femur with 4 erect preapical dorsal bristles. Wing mostly brown, a few rather indistinct small hyaline or subhyaline marks on margin and in field. One strong costal spine, length ca. equal to upcurved portion of vein Sc. Third costal section ca. 3/4 as long as 2nd. Vein R_{2+3} distinctly undulate, vein R_{4+5} with prominent concavity on outer portion just beyond level with apex of vein R_{2+3} . Crossvein r-m at apical 2/3 of cell 1st M_2 , lobe of cell Cu 1/2 as long as vein Cu_{1+1stA} (Fig. 69b).

Two species are placed here.

Pseudacanthoneura aberrans Hardy, new species

Fig. 69

Diagnosis. This species fits very near *P. sexguttata* (de Meijere) but differs by having vein Cu bare, the mesonotum with a complete dark brown to black band across the hind margin, a small brown spot present at the base of the sternopleural bristle, and no hyaline spot on the wing margin of the male in apex of cell R_5 (Fig. 69b). Otherwise it fits the description of *sexguttata*.

♂. Head as in Fig. 69d; wing venation and markings as in Fig. 69b. Abdomen mostly yellow, blackened in median portion of 1st tergum, tinged brown to black on side of terga 3 and 4. Mid and hind femora narrowly brown at apices. Genitalia yellow, surstylus short, rounded at apices. Cercus triangular, equal or slightly longer than epandrium.

Lengths: body 8.0 mm; wing 9.8 mm.

♀. As ♂ except wings with distinctly hyaline markings as follows: 2 in 2nd costal cell, 4 on margin in cell R_1 , 1 in cell R_3 ; 4 hyaline spots in cell R_5 , 1 before and 3 beyond r-m crossvein, 1 at apex (as in ♂ of *P. sexguttata*); 3 hyaline marks across cell 2nd M_2 , 2 or 3 small hyaline marks in 1st M_2 , 3 hyaline spots in cell M_4 (Fig. 69c). Pleura with 1 or 2 spots on mesopleuron near spiracle, 1 on upper posteromedian portion; brown spot on pteropleuron, 2 spots on upper

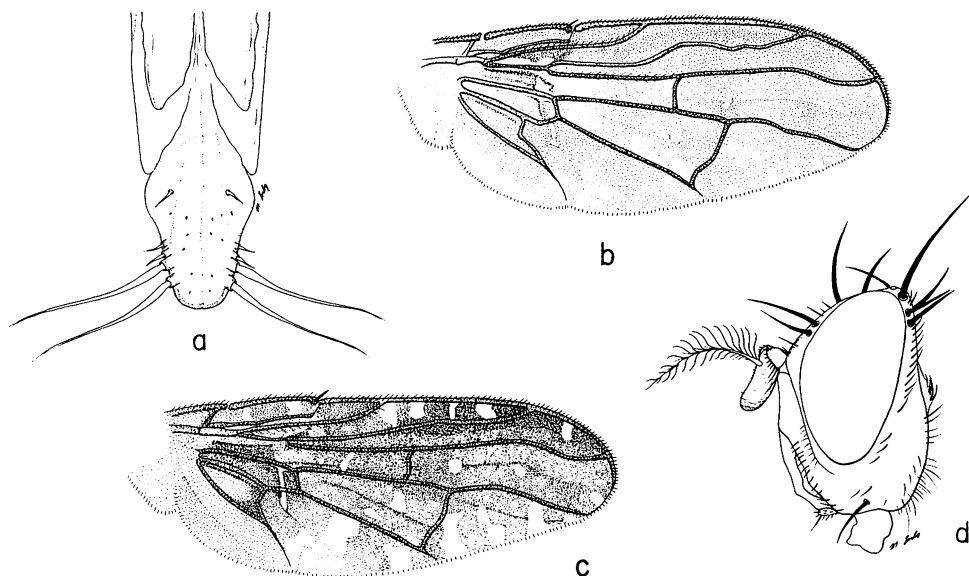


FIG. 69. *Pseudacanthoneura aberrans*: a, ♀ apex of piercer; b, ♂ wing; c, ♀ wing; d, head.

margin of sternopleuron, 1 surrounding bristle, 1 near anterior margin. Piercer rather slender, blunt at apex, 2 strong and 2 weak preapical setae on side (Fig. 69a). Spermathecae small, round, weakly sclerotized.

Holotype ♂, PAPUA NEW GUINEA: upper Stony logging area, nr Bulolo, 765 m, 19.VI.1979, on *Bambusa* (H. Roberts) (BPBM 13,363). *Allotype* ♀, PAPUA NEW GUINEA: Mamai Pltn, E of Fort Glasgow, 150 m, 13.II.1965 (R. Straatman) (BPBM). Following paratypes: PAPUA NEW GUINEA: 1♀, Koroda, 40 km W of Tari, 1650 m, 19.IX.1963 (Straatman); 1♀, Morobe Prov, Wau, 1100 m, 26.X.1961 (J. Sedlacek); 1♀, upper Watut Val, Nauti logging road, 1300 m, 1983 (M.J. Parsons); 2♀, Bulolo, Bulolo Crk, 20.VI.1983, lowland rain forest (H. Roberts). Paratypes in FRSB, UH, and DPIK.

Etymology. The specific epithet is from the Latin *aberrans*, "wandering," and refers to the species being atypical.

Remarks. One male specimen [PAPUA NEW GUINEA: lower Sepik Riv, X.1959 (R. Pullen)] fits *P. aberrans* except the median portion of the face is tinged with brown and markings in the wings are hyaline as in the female. It is not being designated as a paratype; it is in ANIC.

Pseudacanthoneura sexguttata (de Meijere)

Fig. 70

Acanthoneura sexguttata de Meijere, 1913, Nova Guinea, Zool. 9: 364. Type-locality: Lorenze River, Irian Jaya. Type ♂ and 1♀ paratype in ZMUA.

Pseudacanthoneura septemnotata Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 434. Type-locality: Vanimo, Papua New Guinea. Type ♂ in CIHS. *New synonymy*.

Diagnosis. This species can be readily separated from other tephritids by the generic characters given above; the predominantly yellow body and legs with a few brown

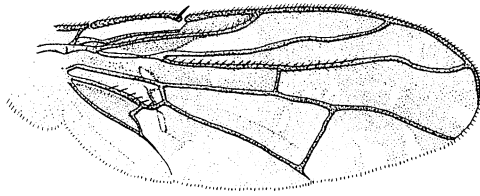


FIG. 70. *Pseudacanthoneura sexguttata*: wing.

spots on sides of the thorax; the dark-colored wing with scattering of small hyaline to subhyaline spots (Fig. 70); and the head shape and bristling, combined with having vein Cu setose above but M_{3+4} bare. It differs from *P. aberrans*, as discussed under that species. Malloch (1939a) compares this species with *Acanthoneura insignis* de Meijere (as *Themaroidopsis*), but the 2 are not related (cf. discussion herein under *T. insignis*).

Head as noted under generic discussion. Yellow to rufous species except for spots on thorax: ♂ with 1 black spot on side above humerus; 1 above presutural bristle; 1 on hind portion of notopleuron; 1 in upper median portion of mesopleuron; 1 on posterolateral portion of mesonotum immediately above wing base, completely hidden except when wings are raised. Female with black spot on propleuron, 1 on hypopleuron. Side of mesonotum tinged brown (on specimen at hand from Papua New Guinea a narrow pale brown streak present in middle on suture between scutellum and mesonotum). Scutellum bare, a few pale brown setae on margins. Propleuron covered with fine yellow hairs, no dark-colored setae. Hind tibia with 6 brownish yellow anterodorsal and 3 anteroventral bristles near middle. Wings as noted above and as in Fig. 70. Apex of cell R_5 brown, tiny hyaline spot near lower margin. Crossvein r-m near apical $3/4$ of cell 1st M_2 , lobe of cell Cu ca. $1/2$ as long as vein Cu_{1+1stA} . Male genitalia not dissected for study, all visible parts yellow.

Lengths: body 8.0–9.0 mm; wing 9.0–9.5 mm.

Distribution. Irian Jaya, Papua New Guinea, and northern Queensland, Australia. Malloch recorded 1 paratype from Gordonvale, Queensland.

Specimens examined. Holotype and 1♀ paratype. PAPUA NEW GUINEA: 1♂, Torricelli Mts, Nengian Vill, 17–24.XI.1958 (W.W. Brandt).

Remarks. In de Meijere's (1913) plate 10, Fig. 37 and 38 are reversed; Fig. 37 should be *Themaroidopsis insignis* (de Meijere) and Fig. 38 should be *Pseudacanthoneura sexguttata* (de Meijere).

Pseudoneothemara Hardy, new genus

Type of genus: *Themarohystrix exul* Curran, 1936, by present designation.

By having the basal portion of vein Cu setose above, *Pseudoneothemara* runs near *Pseudacanthoneura*, but the 2 genera are not related. *Pseudoneothemara* has the ocellar bristles small, setaelike; the mid tibia with 1 long and 1 short apical spur; the mesonotum with conspicuous black vittae (Fig. 71e); and very different wing markings and venation (Fig. 71a, 72). This genus shows close affinities with *Neothemara*, and, in spite of the setose vein Cu, probably best fits in that complex of genera. It is readily differentiated from all known genera by the distinctive wing and mesonotal markings.

For further characteristics refer to the description of the type-species.

Two species are placed here.

Etymology. The generic epithet combines the Greek *pseudo*, "false," with *Neothemara*. The type-species has been previously treated under *Neothemara*.

***Pseudoneothemara exul* (Curran), new combination**

Fig. 71

Themarohystrix exul Curran, 1936, Proc. Calif. Acad. Sci. Ser. 22: 27. Type-locality: Mouo Island, Solomon Islands. Type ♀ in CAS.

Diagnosis. This species differs from *P. repleta* (Walker) by having the anterior margin of the wing entirely dark brown, the 2 hyaline marks through the middle of the wing confluent in cell R_3 , the femora mostly yellow with only the hind pair tinged lightly with brown, and in female specimens the submedian black vittae on the mesonotum joined with the black posterior border.

Head yellow, shaped as in Fig. 71b, brown vitta down middle of front, prominent black spot in middle of face. Ocellar bristles moderately developed, ca. $2/3$ as long as postocellars. Thorax

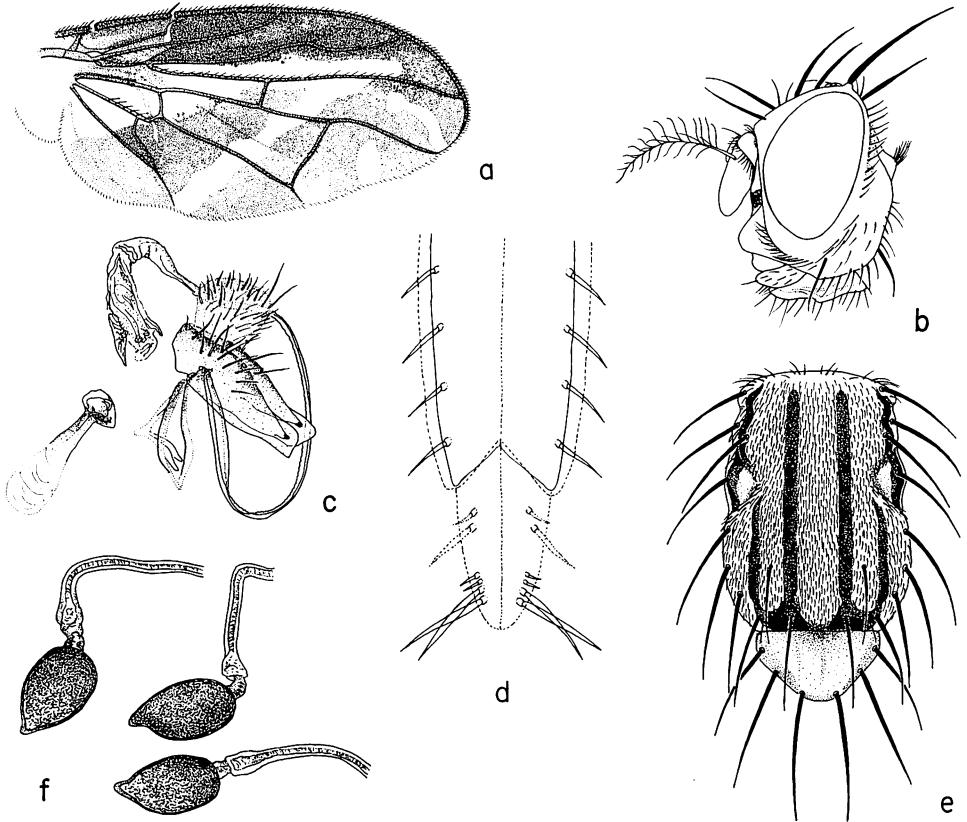


FIG. 71. *Pseudoneothemara exul*: a, wing; b, head; c, ♂ genitalia; d, ♀ apex of piercer; e, ♀ thorax, dorsal view; f, ♀ spermathecae.

yellow, all bristles strong, scutellars ca. equal in size, dorsocentrals ca. halfway between supra-alars and postalars. Side of scutellum with scattered erect black setae. In ♂ submedian vittae on mesonotum narrow, ending ca. opposite dorsocentral bristles, widely isolated from narrow black U-shaped mark behind suture. In ♀ submedian vittae broader, continuous, joined with black posterior border of mesonotum; markings as in Fig. 71e. Narrow black vitta from lower margin of cervical sclerite across propleuron, middle of mesopleuron and middle of pteropleuron, another narrow dark brown to black vitta present along upper margin of sternopleuron. Pleuroterga mostly yellow, tinged brown medially, metanotum dark reddish brown to blackish. Wing as noted above and as in Fig. 71a. Third costal section subequal to 2nd. Vein R_{2+3} moderately curved. Last sections of veins R_{4+5} and M_{1+2} gently convex. Crossvein r-m near apical $2/3$ of cell 1st M_2 , lobe of Cu almost equal to vein Cu_{1+1stA} . First 2 terga entirely pale yellow, terga 3-5 narrowly yellow at bases, rather broadly so at apices; 6th tergum of ♀ yellow in middle, black on side. Male genitalia as in Fig. 71c. Ejaculatory apodeme unusually small, poorly developed (specimen examined does not appear teneral). Basal segment of ovipositor black, short, broad, scarcely longer than wide, ca. equal in length to terga 4+5. Apex of piercer blunt (Fig. 71d). Three oval spermathecae, short nipples at apices (Fig. 71f).

Lengths: body and wing each 7.0-7.5 mm.

Distribution. Solomon Islands and Bismarck Archipelago.

Specimens examined. Ca. 60 specimens with following data. PNG: N SOLOMON IS: Bougainville I: Kieta, 26.XI.1959 (T.C. Maa); Kukugai Vill, 150 m, XI.1960 (W.W. Brandt); Konga, II-III.1951 (Brandt); Tonolai, 24.V.1979 (H. Roberts). SOLOMON IS: Guadalcanal: 11.VII.1944 (H.E. Milliron); Betikama, IX.1960 (Brandt); Kolombangara I: Pepete, 30 m, 13.II.1964 (P. Shanahan); Choiseul I: Malangona, 30 m, 14.III.1964 (Shanahan); Florida Group: Bungana I: 28.XI.1944 (Milliron); Santa Ysabel: Sukapisu, 900 m, 19.VI.1960 (C.W. O'Brien); Buala, 17.VIII.1964 (R. Straatman); "Solomon Is," VII-VIII.1908 (W.W. Froggatt). BISMARCK ARCH: NEW BRITAIN: Keravat, 30 m, 2.IV.1956 (J.L. Gressitt); NEW IRELAND: Kandan, 1.I.1960 (W.W. Brandt).

***Pseudoneothemara repleta* (Walker), new combination**

Fig. 72

Strumeta repleta Walker, 1861, J. Proc. Linn. Soc. Lond., Zool. 5: 296. Type-locality: "Bachan" [Batjan], Maluku. Type ♀ in BMNH.

Diagnosis. This species fits near *P. exul*; it differs by having 3 hyaline marks on the anterior margin of the wing, 2 in cell R_1 , and 1 in R_3 , a hyaline longitudinal mark from the base of the anal cell through the basal $1/2$ of cell R_3 , and an oblique hyaline vitta from the apex of vein Cu_{1+1stA} between r-m and m crossveins to vein R_{4+5} (Fig. 72). The mid and hind legs are predominantly black; the submedian black vittae on the mesonotum are not joined with black posterior border of mesonotum; the front is yellow to rufous. Otherwise it fits the description of *exul*.

Distribution. Maluku.

Specimens examined. The ♀ holotype (unique).

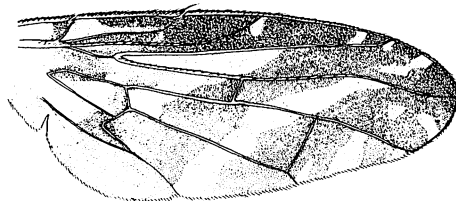


FIG. 72. *Pseudoneothemara repleta*, wing.

Quasirhabdochaeta Hardy, new genus

Type of genus: *Quasirhabdochaeta singularis*, n. sp.

Parallelism in the development of a peculiar wing pattern, characterized by a dark brown to black central field and numerous dark rays radiating to margin along costa (Fig. 73a), has occurred in various genera representing 3 subfamilies of Tephritidae. This wing pattern is a characteristic feature of the Schistopterinae, which consists of 10 genera that are all Afrotropical except *Rhabdochaeta* de Meijere (which is widespread throughout the tropical regions of the world excluding the Neotropics) and 1 species of *Schistopterum* Becker [recently recorded from Papua New Guinea (Hardy, 1982b)]. In the Tephritinae this feature is characteristic of the genera *Noeeta* Robineau-Desvoidy in the Palearctic Region, *Neorhabdochaeta* Malloch in the Neotropics, and *Paracantha* Coquillett, which occurs in the New World. The discovery of a trypetine in the tribe Acanthonevrini from New Britain that has this type of wing marking is most remarkable.

This genus is readily differentiated from all known Trypetinae by the wing markings (Fig. 73a). I am unable to relate it to any of the known genera or to even place it in a genus complex or group.

Head and thorax with full complement of bristles, including strong ocellars, intrapostalars, pteropleurals, and 6 scutellars. Head (Fig. 73c) higher than long, face straight on upper 2.3, projected above oral margin, front sloping. Mid tibia with 1 strong apical spur. Wing characterized by markings, vein R_{2+3} curved upward only beyond level with m crossvein (Fig. 73a). Female ovipositor with piercer gradually tapered to a blunt apex, 2 prominent setae on side of apex (Fig. 73d). Three mushroom-shaped spermathecae (Fig. 73e).

Etymology. The generic epithet combines the Latin *quasi*, "appearing as if" or "simulating," with *Rhabdochaeta*. It refers to the strong resemblance to *Rhabdochaeta*.

Quasirhabdochaeta singularis Hardy, new species

Fig. 73

Diagnosis. This species can be readily recognized by the characters given for the genus above.

♀. *Head.* Shaped as in Fig. 73c. Yellow, compound eyes dark, ocellar triangle black, tinge of brown in median portion of front. Two pairs each inferior and superior fronto-orbital bristles evenly spaced on front. Ocellar bristles equal in size to lower superior fronto-orbitals. Third antennal segment not much longer than wide, ca. 2/3 length of face. Arista long plumose, row of short hairs on inner margin. Supracervical setae black. *Thorax.* Pale yellow to almost white with following prominent black markings: large spot on side of mesonotum behind humerus, encompassing base of presutural bristle; large transverse mark filling most of area behind suture to postalar bristles, an arm on side extending posteriorly between prescutellar and intrapostalar bristles almost to hind margin of mesonotum (Fig. 73e); side of metanotum and hind portion of pleurotergite dark brown to black; large black mark covering middle portion of pleura, extending across posterior 1/2 of mesopleuron, almost to level of mesopleural bristles, onto lower front portion of pteropleuron and upper edge of sternopleuron. Propleuron with fine pale setae. Lower middle portion of mesopleuron with numerous black bristlelike setae. Scutellum bare, disc flat or nearly so. *Legs.* As noted above under generic discussion. *Wing.* Veins R_1 , R_{4+5} , and R_s setose. Costal spine rather large, almost equal in length to upcurved portion of vein Sc. Third costal section ca. 1/2 as long as 2nd, 4th section slightly longer than 5th. Two dark rays through

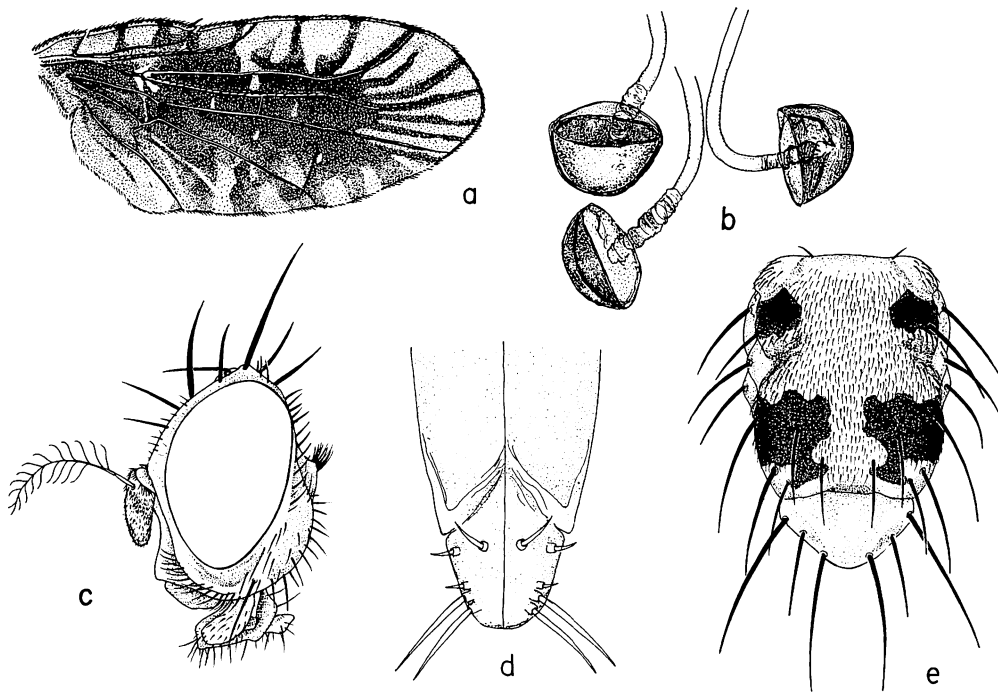


FIG. 73. *Quasirhabdochaeta singularis*: a, wing; b, ♀ spermathecae; c, head; d, ♀ apex of piercer; e, thorax, dorsal view.

middle of cell 1st M_2 , lobe of cell Cu ca. $1/2$ as long as Cu_{1+1stA} . *Abdomen*. Polished black on sides of terga 3-6, pale yellow, almost white down middle and over terga 1 and 2. Ovipositor yellow, basal segment about equal in length to terga 4-6. Apex of piercer as in Fig. 73d. Three mushroom-shaped spermathecae (Fig. 73e).

Lengths: body, without ovipositor, 4.75 mm; wing 5.25 mm.

♂. Unknown.

Holotype ♀, PNG: BISMARCK ARCH: NEW BRITAIN: Baining Vill, 28.V.1980 (H. Roberts) (BPBM 13,364). 2♀ paratypes, NEW BRITAIN: Gazelle Penin, Kerawat, 6 m, 11.IX.1965 (J.L. Gressitt) (BPBM).

Etymology. The name is from the Latin *singularis*, "unique" or "extraordinary."

Genus *Rabaulia* Malloch

Rabaulia Malloch, 1939, Ann. Mag. Nat. Hist. Ser. 11, 4: 257. Type-species: *Rabaulia fascifacies* Malloch, 1939, by original designation.

This genus fits in the group of genera characterized by predominantly brown wings, without hyaline marks; veins Cu and M_{3+4} being setose above; lack of the pteropleural bristle; and bare scutellum disc. By having strong spurs at the apex of the middle tibiae, the male surstylus short and thick, broadly rounded apically, and the lobe of the 10th

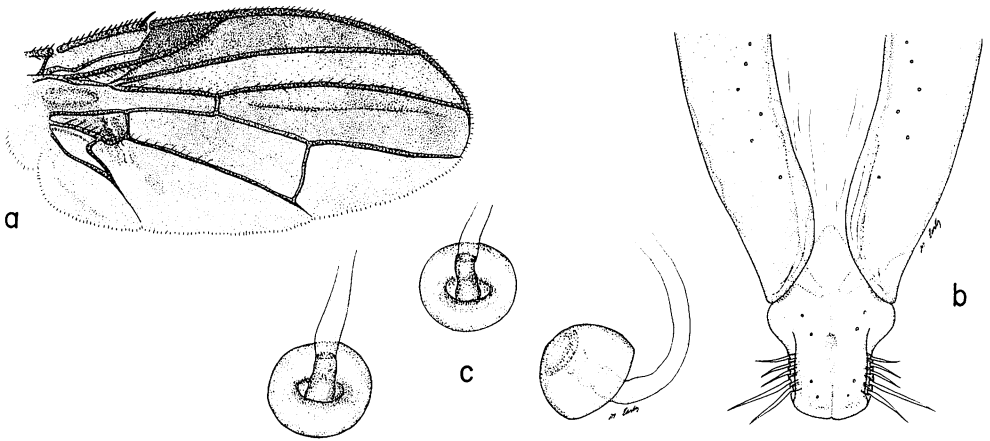


FIG. 74. *Rabaulia fascifacies*: a, wing; b, ♀ piercer of ovipositor; c, ♀ spermathecae.

sternum short (Fig. 75b), it fits close to *Trypanocentra* Hendel. *Rabaulia* differs by having the vertex developed into a sharp, thin, backwardly developed keel; the face prominently convex in profile (Fig. 75a), and the front basitarsus of the male lacking combs. The wing is uniformly dark brown. For more complete details refer to the original description.

Three species are placed here.

KEY TO SPECIES OF *RABAUlia*

1. With prominent black band across middle of face 2
Face, pleura and legs all yellow **invittata**
2. Mid and hind tibiae mostly black; mesonotum mostly black, diffused yellow mark on anteromedian portion **nigrotibia**
All tibiae yellow; mesonotum with 3 narrow, yellow, longitudinal vittae **fascifacies**

***Rabaulia fascifacies* Malloch**

Fig. 74

Rabaulia fascifacies Malloch, 1939, Ann. Mag. Nat. Hist. Ser. 11, 4: 258. Type-locality: Lunga, Guadalcanal. Type ♂ in BMNH.

Diagnosis. This species fits close to *R. nigrotibia* by having a black band on the face, but it differs by having 3 narrow, yellow, longitudinal vittae on the mesonotum, with 2 laterals complete and continuous along sides of scutellum, median vitta ending ca. opposite dorsocentral bristles; by having a dark brown spot on eye margin, opposite bases of antennae, and a narrow dark brown to black line along eye margin on upper portion of front; and by having mostly yellow to rufous legs, tinged brown on femora.

Wing as in Fig. 74a. Basal segment of ovipositor, as seen in situ, equal in length to terga 4+5. Piercer short, thick, ea. $2\frac{1}{2}$ longer than wide, $1/2$ as long as membranous 8th segment, blunt at apex as in Fig. 74b. Three small round spermathecae, with deeply introverted ducts (Fig. 74c).

Lengths: body and wings each 4.0–4.5 mm.

For more details, refer to the original description.

Distribution. Solomon Islands and New Britain.

Specimens examined. Type series and 50+ specimens from a number of localities throughout the Solomons (Bougainville, Guadalcanal, Fauro, Florida, Russel, and Tulagi islands) and Rabaul, New Britain.

Rabaulia invittata Hering

Rabaulia invittata Hering, 1951, *Siruna Seva* 7: 6. Type-locality: Hollandia [Jayapura], Irian Jaya. Type ♂ in BMNH.

Diagnosis. This species can be differentiated from other *Rabaulia* by its all yellow face, pleura, and legs.

Lengths: body and wing each 4.6 mm.
Refer to original description for details.

Distribution. Irian Jaya (Jayapura).

Specimens examined. Holotype ♂. IRIAN JAYA: 1♂, Cyclops Mts, 3400–4500 ft [1036–1371 m], III.1936 (L.E. Cheesman) (BMNH).

Rabaulia nigrotibia Hering

Fig. 75

Rabaulia nigrotibia Hering, 1941, *Ann. Hist. Nat. Mus. Natl. Hung.* 34: 61. Type-locality: Seleo, Berlinhafen [Aitape, Papua New Guinea]. Type ♂ in TMB.

Diagnosis. This species differs from other species of *Rabaulia* by having all femora black and the tibiae mostly black; no dark marks between the antennae and eye margins or on upper frontal orbits; and mesonotum all black except for a diffuse yellow mark on anteromedian portion.

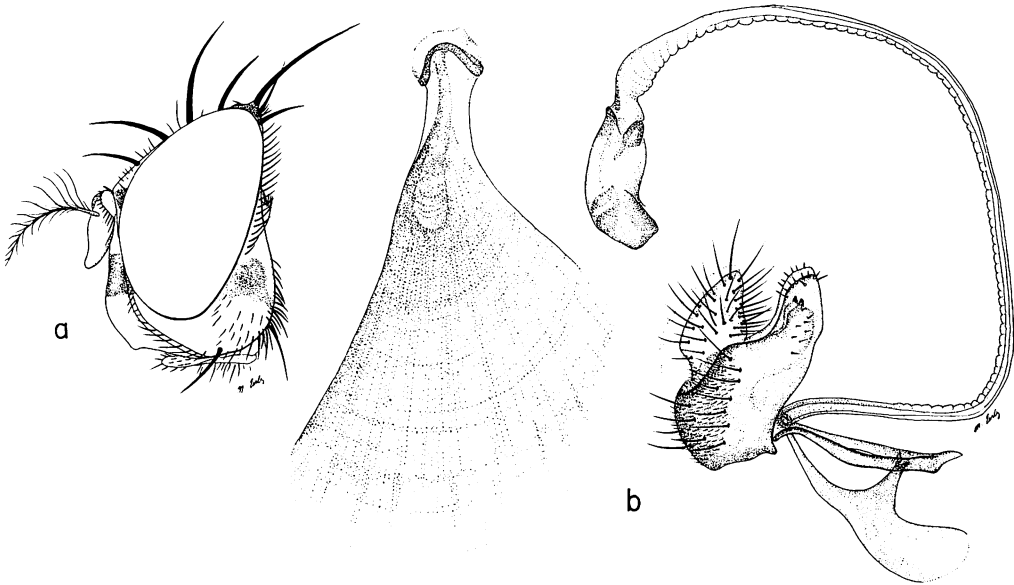


FIG. 75. *Rabaulia nigrotibia*: a, head; b, ♂ genitalia.

Head as in Fig. 75a. Male surstylus broad, rounded apically. Lobe of 10th sternum short, thick (Fig. 75b). Aedeagal apodeme very large, fanlike, much larger than remainder of genitalia.

Lengths: body and wing each 4.0 mm.

For more details refer to original description.

Distribution. Papua New Guinea.

Specimens examined. Type series. 11 specimens with following data: PAPUA NEW GUINEA: Bubia, nr Lae, 28.XII.1963 (D.K. McAlpine); Imbia, nr Maprik, 22.XII.1963 (McAlpine); E Sepik Prov, Dreikikir, 350-400 m, 23.VI.1961 (J.L. & M. Gressitt); nr Tufi, 15.XI.1982, in rain forest (J.W. Ismay); 20 km SE of Port Moresby, 13.II-27.XII.1982 & 20.II-12.IV.1983, swept from bushes (Ismay); Daru, T. Wyborn property, 6.VI.1980 (R.A.I. Drew).

Genus *Rabauliomorpha* Hardy

Rabauliomorpha Hardy, 1970, Entomol. Medd. 38: 122. Type-species: *Rabauliomorpha gibbosa* Hardy, 1970, by original designation.

This genus fits in the group of genera that have dark fumose wings, strong setae along veins M_{3+4} and Cu_1 , the pteropleura with only fine setulae, the front legs of the male ornate, and the disc of the scutellum bare. By the male having the surstylus and lobe of 10th sternum short it fits in a complex with *Rabaulia* and *Trypanocentra* Hende. It is like the former in having the face convex in profile but the convexity is highest in the middle of the face, rather than below the middle. It also lacks a sharp, backward-developed keel on the vertex, has only 1 strong spine at the apex of the mid tibia, and the male possesses a ventral comb on the front basitarsus. It differs from *Trypanocentra* by having the face gibbose, the antennae $2/3$ as long as the face, and only a single strong apical spine on the front tibia; the spiracular openings on the 7th abdominal segment of the female are at the basal $1/5$. For more details refer to the original description.

Only 1 species is known.

Rabauliomorpha gibbosa Hardy

Fig. 76

Rabauliomorpha gibbosa Hardy, 1970, Entomol. Medd. 38: 124. Type-locality: Yalom, New Britain. Type-♂ in ZMUC.

Diagnosis. This species can be readily differentiated by the generic characters given above and by the all yellow, strongly gibbose face and yellow thorax, the pair of longitudinal black vittae extending the full length of the mesonotum in line with the dorso-central bristles and along sides of scutellum, the short brown mark on side of the notopleuron, and the narrow brown longitudinal vitta through the middle of the mesopleuron.

Male genitalia with surstylus and lobe of 10th sternum short, thick (Fig. 76c). Female ovipositor blunt at apex, short preapical setae as in Fig. 76a. Three semicircular spermathecae with slightly inverted ducts (Fig. 76b).

For more complete description and figure of head, wing, and front basitarsus of male, refer to the original description.

Distribution. New Britain and New Guinea.

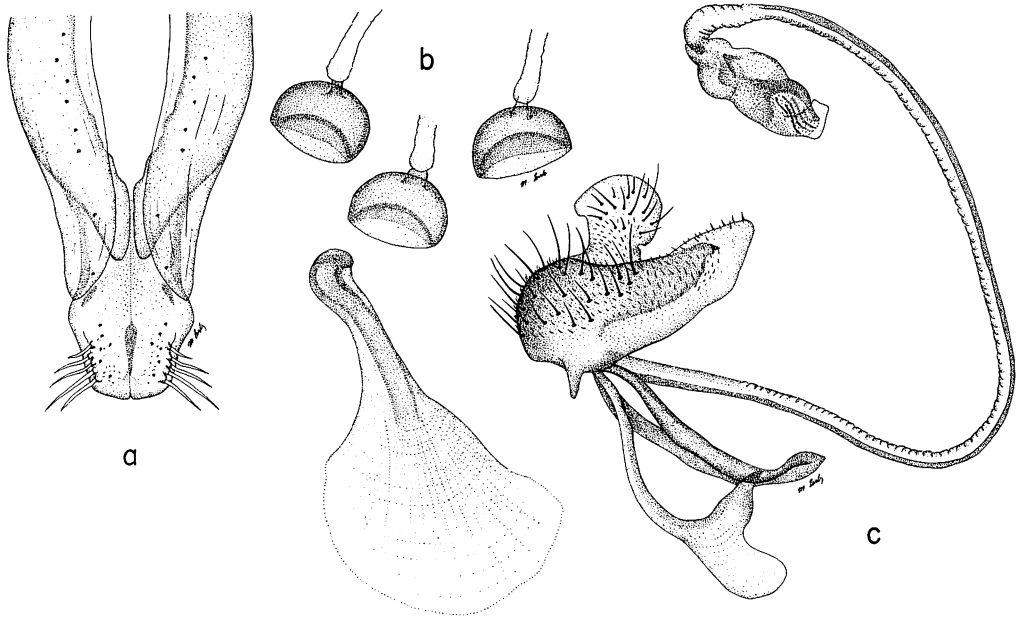


FIG. 76. *Rabauliomorpha gibbosa*: a, ♀ apex of piercer; b, ♀ spermathecae; c, ♂ genitalia.

Specimens examined. Ca. 50 with data as follows. PAPUA NEW GUINEA: Morobe Prov, Wau, 1200 m, X-XII.1962 & 21.I.1963 (J. & M. Sedlacek); same, 9.VI.1972 (B.S. Cheary); Morobe Prov, Arabuka, 1500-2000 m, 7.I.1968 (Sedlacek & Sedlacek); Garaina, 800 m, 4.I.1968 (Sedlacek); Finschhafen, 21.IV.1944 (E.S. Ross); Huon Penin., Pindiu, 860 m, 22.IV.1963 (J. Sedlacek); Stony logging area, nr Bulolo, 10.VII.1979 (H. Roberts). IRIAN JAYA: Iffar, Lake Sentani, VIII.1936 (L.E. Cheesman).

Genus *Rioxa* Walker

Rioxa Walker, 1856, J. Proc. Linn. Soc. Lond., Zool. 1: 35. Type-species: *Rioxa lanceolata* Walker, 1856, by monotypy.

Ptilonia Enderlein, 1911, Zool. Jahrb., Abt. Syst. Geogr. Biol. Tiere 31: 447. Type-species: *Ptilonia sexmaculata* Wulp, 1880, by original designation.

The concept of this genus has been confused in the literature. A number of the species that have been assigned here actually fit in *Acanthonevra* Macquart. *Rioxa* species somewhat resemble *Acanthonevra* but are differentiated by having 2 pairs of inferior fronto-orbital bristles, the arista bare ventrally, the postocellar bristles yellow, vein R_1 comparatively long and the subcostal vein rather strongly arcuate (Fig. 77).

Narrow bodied, mostly yellow species with narrow brown to black vitta down dorsocentral line, extending onto side of scutellum, narrow brown to black vitta along lateral margin of mesonotum from above humerus to wing base. Pleura usually yellow with 2 brown to blackish longitudinal vittae, abdomen shining black on side, narrow yellow band down middle of dorsum to terga 1-4 in ♂, 1-5 in ♀. Head ca. as high as long, face gently concave on lower 2/3, oral margin slightly protruded. Two pairs inferior fronto-orbital bristles on lower 1/3 of front, 2 pairs well-spaced superior fronto-orbitals on upper 3/5 (Fig. 80a). Ocellar bristles setalike.

Supracervical setae brown to black. Arista long-haired dorsally, short hairs on inner margin, ventral margin bare except at extreme base. Mesonotum ca. 1/3 longer than wide measured between supraalar bristles, scutellum 1/4 wider than long. With full complement of bristles except lacking intrapostalars. With 4 strong and 2 weak secondary scutellars, ca. 1/2 as long as other bristles. Scutellum bare. Dorsocentral bristles slightly behind a line drawn between supraalars. Legs yellow, or with hind femur tinged brown to black basally. Front femur with row of moderately strong black posteroventral bristles. One apical spur on mid tibia, hind tibia with 2 anteroventral bristles at middle. Wing predominantly dark brown to blackish, hyaline marks on margin, occasionally in middle (Fig. 77, 81a). Veins R₁ and R₄₊₅ setose above. Subcostal vein rather strongly arcuate, oblique at apex. Cell Sc (3rd costal section) comparatively elongate, distinctly longer than 2nd costal section, vein R₁ extending at least beyond level of r-m crossvein, 4th costal section shorter than 5th. [In *R. lanceolata* Walker and *R. erebus* Rondani vein R₁ ends in costa very close to R₂₊₃, 4th costal section scarcely 1/4 as long as 5th (Fig. 78). In *R. parvipunctata* de Meijere, *R. sexmaculata* (Wulp), and *R. sumatrana* Enderlein R₁ slightly longer in ♂ than ♀, 4th costal section ca. 1/2 to equal in length to 5th (Fig. 80d)]. Veins R₄₊₅ and M₁₊₂ divergent. Costal spines small, scarcely if at all differentiated from costal setae. Male genitalia (Fig. 80b) with epandrium narrow, ca. 1/2 as long as cercus, narrower than surstylus. Surstylus parallel-sided, truncate at apex (Fig. 80b). Vanes of aedeagal apodeme fused. Base of ♀ ovipositor subequal in length to terga 3-6. Extended ovipositor ca. 1/3 longer than remainder of abdomen. Piercer rather short, ca. 1/2 as long as 8th segment, 2 moderate and 2 short closely placed pre-apical setae (Fig. 79c). Three trinodose spermathecae (Fig. 80c). No specific characters in genitalia of either sex.

Five species are presently treated from this region. They are differentiated from each other almost entirely by wing markings. The hyaline spots in the wings show considerable variation and their validity as specific characters is somewhat suspect. It is necessary that large series of all taxa be compared carefully.

There is no definite information concerning the biology of *Rioxa*. The records of *Rioxa* breeding in rotting fruits in Australia (Dr Guy Bush, in litt.) pertains to *Dirioxa pornia* (Walker). In Indonesia I have collected 2 species hovering around the buttresses of large trees in the forest. I suspect they may be breeding in rotting wood, but this supposition has not been verified.

KEY TO SPECIES OF *RIOXA* FROM INDONESIA
(INCLUDING ALL OF BORNEO) AND NEW GUINEA

- 1. Cell R₅ dark brown to blackish, apex hyaline (Fig. 80d); 4th costal section subequal to 5th section (Fig. 79b) 2
 Cell R₅ with 1 or 2 large hyaline marks; cell R₁ parallel to R₂₊₃, greatly narrowing 4th costal section (cell R₁) (Fig. 77) 4
- 2. With hyaline mark in cell R₁ just beyond apex of vein R₁; 4th costal section equal in length to 5th; narrow rim of black on oral margin, except at lower edge of face 3
 Costal margin brown to beyond vein R₂₊₃, no hyaline mark in cell R₁; 4th costal section 1/2-3/5 as long as 5th; oral margin predominantly or entirely yellow . . . (Java; Sri Lanka; Thailand) **parvipunctata**
- 3. With prominent hyaline mark in cell Sc; cell R₁ with a hyaline spot at base and a large spot filling cell just beyond apex of vein R₁ . . . (Sumatra; Java; Solomon Is) **sumatrana**

- Sc all brown or with only a tiny hyaline spot; base of R₁ usually all brown, sometimes a tiny spot; spot at apex of R₅ small, not crossing cell *sexmaculata*
4. With an elongate hyaline streak through R₅ before r-m crossvein and a round hyaline spot beyond crossvein; cell R₁ entirely brown (Fig. 78) . . . (Sumatra; Java) *lanceolata*
- Cell R₅ brown basad of r-m crossvein; with a hyaline mark in cell R₁ just beyond level with apex of vein Sc (Fig. 77) . . . (Sarawak) *erebus*

Rioxa erebus Rondani

Fig. 77

Rioxa erebus Rondani, 1875, Ann. Mus. Civ. Stor. Nat. Genova 7: 436. Type-locality: Sarawak. Type in MSNG.

Diagnosis. This species fits in a complex with *R. lanceolata* Walker that is characterized by an elongate vein R₁ that reaches the costa beyond level with m crossvein and extends close to vein R₂₊₃ so that the 4th costal section (wing margin between R₁ and R₂₊₃) is very narrow, 1/4 or less length of the 5th section. It differs from *lanceolata* by having cell R₅ brown basad of the r-m crossvein, prominent hyaline marks in cells R₁ and R₃ just distad of the apex of vein Sc, and a distinct hyaline mark in the 2nd costal cell just before Sc (Fig. 77).

Front yellow, tinged brown to black on lower 1/3. Face mostly yellow, tinged brown in antennal furrows, gena black. Pleura atypical: predominantly black, lacking distinct longitudinal vittae. Black vittae on mesonotum in line with dorsocentral bristles, side of scutellum shining black. Coxae and trochanters black. Front leg otherwise yellow. Mid femur yellow with black bases, hind femur mostly black, yellow only at apex. Tibiae and tarsi yellow.

Distribution. Sarawak.

Specimens examined. MALAYSIA: SARAWAK: 1♀, Mt Dulit, 9.IX.1932; 1♀, Mt Kalulong, 1500 ft [457 m], 6.XI.1932 (BMNH); 2♀ [no further data] (MSNG).

Remarks. Two specimens (MSNG) show some variation in wing spots: 3 spots are present in cell R₃ with an extra spot in line with spot in R₅ beyond r-m crossvein; a small hyaline spot is present in cell 1st M₂ just before the m crossvein, with a hyaline mark near the median portion of cell M₄ and 1 in the 2nd costal section comparatively small.

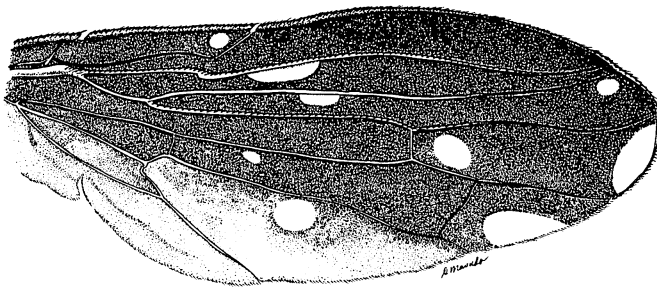


FIG. 77. *Rioxa erebus*, wing.

Rioxa lanceolata Walker

Fig. 78

Rioxa lanceolata Walker, 1856, J. Proc. Linn. Soc. Lond., Zool. 1: 35. Type-locality: Singapore. Type ♂ in BMNH.

Rioxa nox Rondani, 1875, Ann. Mus. Civ. Storia Nat. Genova 7: 437. Type-locality: Sarawak. Type ♀ in MSNG.

Diagnosis. This species fits in the complex of species that have cell R_5 strongly narrowed apically; it is close to *R. erebus*. It differs from all known *Rioxa* by having an elongate hyaline streak through cell R_5 before the r-m crossvein, cell R_1 entirely brown, and other details of the wing markings and venation as in Fig. 78.

Fits characteristics of other *Rioxa*. With 2 longitudinal vittae on the pleura; yellow legs except for brown to black on basal 1/2 of hind femur and basal 1/4 of mid femur.

Distribution. Sarawak, Singapore, Sumatra, and Java.

Specimens examined. Types of *lanceolata* and *nox*. Two specimens from Sarawak (BMNH); 10 from Sumatra (PIZ); 8 from Java (ZMUA).

Rioxa parvipunctata de Meijere

Fig. 79

Rioxa sexmaculata var. *parvipunctata* de Meijere, 1911, Tijdschr. Entomol. 1: 381. Type-locality: Depok, Java. Type ♂ in ZMUA.

Rioxa infirma Hering, 1941, Siruna Seva 3: 24. Type-locality: Ceylon [Sri Lanka]. Type ♂ in ZMHB.

Diagnosis. This species fits in the *sexmaculata* species complex by having the 4th costal section subequal in length to the 5th and no hyaline marks in the middle of the wing (Fig. 79b). De Meijere described it as a variety of *sexmaculata* based on smaller hyaline spots on the wing margin and lack of a spot in cell R_1 . The types of both *R. parvipunctata* and *R. infirma* and the series of specimens I have examined seem to consistently differ from *R. sexmaculata* by having R_1 entirely brown and lacking a hyaline spot at the apex. This is the only character I find for separating *parvipunctata* from *sexmaculata*, except that the oral margin of *parvipunctata* is predominantly or entirely yellow, not bordered with black, and the 4th costal section is 1/2-3/5 as long as the 5th section. Otherwise, the species fits the characters of other *Rioxa*. The apex of the female piercer is as Fig. 79c and the spermathecae as Fig. 79a.

Lengths: wing 7.0-8.0 mm.

Distribution. Sri Lanka, Thailand, Java, and Vietnam.

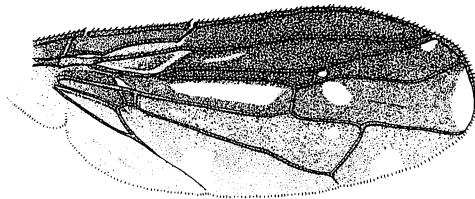


FIG. 78. *Rioxa lanceolata*, wing.

Specimens examined. Types of both taxa and ca. 15 specimens in collections of BMNH, BPBM, NHMB, SMNS, and ZMUC from JAVA [Preanger, Wynkoops Bay, IV.1935 (E. LeMoalt)] and SRI LANKA. Specimens have also been seen from THAILAND (Hardy 1973: 109) and VIETNAM [Ban M'Drak, E of Lac Giao, 4-600 m, 8-19.XII.1960 (C.M. Yoshimoto) (BPBM)].

Rioxa sexmaculata (Wulp)

Fig. 80

Ptilona sexmaculata Wulp, 1880, Tijdschr. Entomol. 23: 185; 1881, Midden-Sumatra, Dipt. 9: 51, pl. 3, Fig. 7-11. Type-locality: Sumatra. Type ♀ in ZMUC.

Rioxa quinquemaculata Bezzi, 1913, Mem. Indian Mus. 3: 115. Type-locality: Tenasserim, lower Burma. Type ♀ in ZSIC.

Diagnosis. This species fits near *R. parvipunctata* and the only differentiating characters I find are the presence of a prominent hyaline spot in the apex of cell R₁, a narrow black rim around the oral margin, and the 4th costal section ca. equal in length to the 5th.

A small hyaline spot sometimes present in 2nd costal section and also in basal portion in cell R₁. Wing otherwise as in Fig. 80d. Head as in Fig. 80a. Male cercus small, not much longer than width of epandrium. Surstylus straight-sided, nearly 4× longer than wide, blunt at apex. Vanes of aedeagal apodeme fused for most of their length (Fig. 80b). Female spermathecae as in Fig. 80c. Otherwise fits description of other *Rioxa*.

Lengths: body 7.0-7.25 mm; wing 6.5-6.7 mm.

Distribution. Widespread throughout the Oriental Region, from India to Indonesia.

Specimens examined. Types of both taxa. Several dozen specimens from throughout range of this species (Hardy 1973: 111, 1974: 79). Several localities in MALAYSIA: SARAWAK. IRIAN JAYA: Soekaboemi (E. LeMoalt). JAVA: Bogor, Kabun Raya, VII.1975 (a series collected in mating flight around buttress of a large forest tree in botanical garden) (D.E. Hardy).

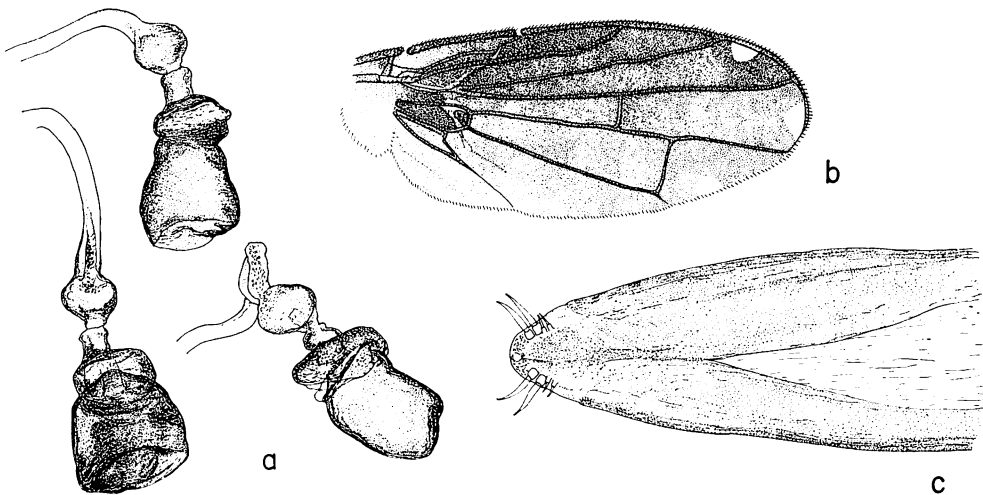


FIG. 79. *Rioxa parvipunctata*: a, ♀ spermathecae; b, wing; c, ♀ apex of ovipositor.

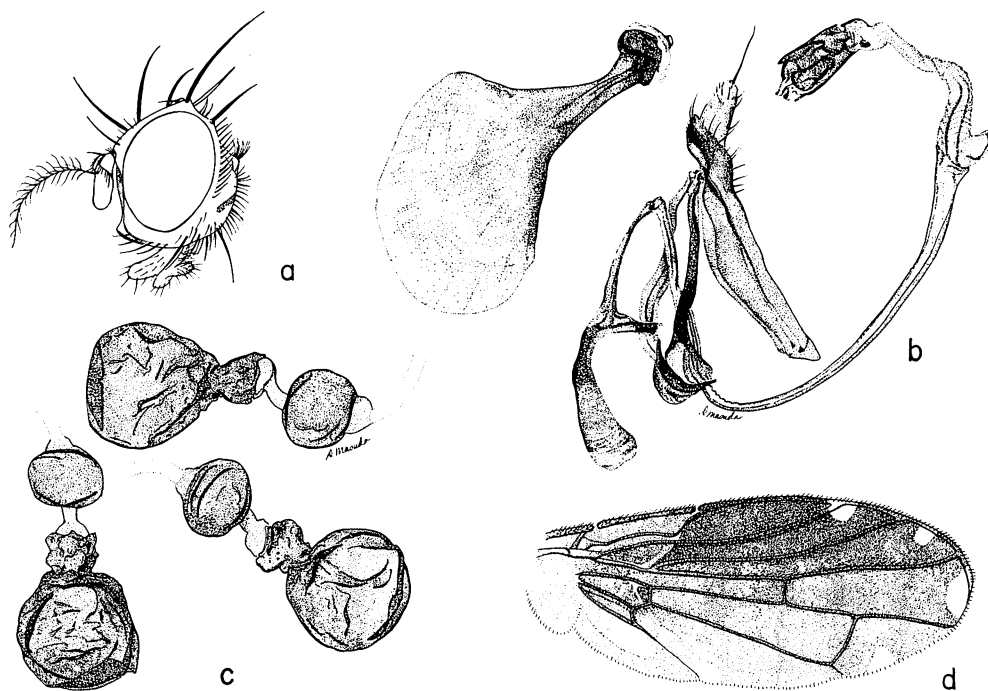


FIG. 80. *Rioxa sexmaculata*: a, head; b, ♂ genitalia; c, ♀ spermathecae; d, wing.

Rioxa sumatrana Enderlein, resurrected from synonymy

Fig. 81

Rioxa sumatrana Enderlein, 1911, Zool. Jb. Abt. Syst. Geogr. Biol. Tiere 31: 449. Type-locality: Sumatra. Type ♂ in PIZ.

Diagnosis. This species was synonymized with *R. sexmaculata* by de Meijere (1914: 201). I have previously accepted the synonymy (Hardy 1973: 109, 1974: 79), but after studying more material I feel it best to resurrect this species. It differs from *sexmaculata* by having a prominent hyaline mark in cell Sc, a mark at the base of cell R₁, and a large spot in R₁ just beyond the end of vein R₁ that extends almost completely across the cell (Fig. 81a).

Lectotype ♂ with mesopleura and propleura entirely black. Hind femur brown to blackish except for yellow apices, other legs yellow. Face narrowly rimmed with black, gena discolored brown to blackish in most specimens. Other wing characters as in Fig. 81a. Spermathecae binodose, swollen node beyond neck as in Fig. 81b.

Lengths: body 6.5-7.5 mm; wing 6.0-7.0 mm.

Distribution. Java, Sumatra, Sarawak, and Solomon Islands.

Specimens examined. Lectotype ♂ and paralectotype ♀ (PIZ). Six specimens with following data. IRIAN JAYA: Wynokoops Bay, VIII.1937, B.M. 1962-651; MALAYSIA. SARAWAK: Kapit Distr, Merirai Val, 30-300 m, 1.VII.1958 (T.C. Maa); Lundu Distr, Kampong Pueh, 690-1500 m, 6-12.VI.1958 (Maa). SOLOMON IS: Malaita: Auki, 2-20 m, 22.IX.1957 (J.L. Gressitt).

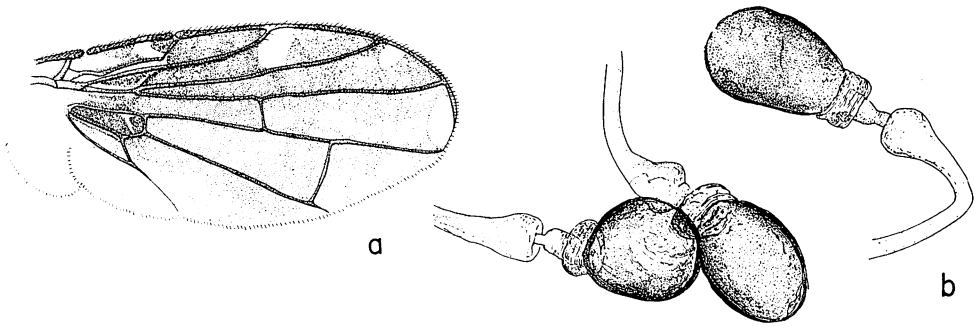


FIG. 81. *Rioxa sumatrana*: a, wing; b, ♀ spermathecae.

Remarks. The coloration of the pleura appears to be variable. Most specimens on hand fit the type or are predominantly dark reddish brown to blackish, but I have seen a few specimens that have pleura mostly yellow with indistinct brown vittae; the latter specimens may be teneral.

Saucromyia Hardy, new genus

Type of genus: *Saucromyia bicolor*, n. sp.

Diagnosis. This is an aberrant taxon that I am unable to relate to any known genus. It fits in the complex of genera that have only 1 inferior orbital bristle, the arista plumose, and only 1 strong apical spur on the mid tibia. By having the dorsocentral bristles posterior in position just before a level between the postalar bristles, the genus keys near *Heringomyia*, n. gen., but the 2 genera do not appear to be closely related. *Saucromyia* differs from *Heringomyia* by having the upper superior fronto-orbital bristles weak, setalike; the sternopleural bristles weak, hairlike, ca. equal in size to the setae on the lower margin of the sternopleuron; the prescutellars absent; the head, thorax, and abdomen shining black except for bright yellow sterno- and hypopleura; and the wings as in Fig. 82b. *Heringomyia* lacks upper superior fronto-orbitals; the sternopleural bristles are strong; prescutellar bristles are present; the head and thorax are yellow to rufous with 2 black longitudinal vittae; and the wings are as in Fig. 39.

Head (Fig. 82a) with front sloping, face vertical, receding on oral margin. Thorax with full complement of bristles but lacking prescutellars, pteropleurals ca. equal in size to mesopleurals. Pleura almost bare of setae except for a few scattered inconspicuous short hairs. Mesonotum densely covered with short black recumbent setae, entire surface minutely punctulate. Scutellum flat on disc, with numerous suberect setae. Secondary scutellars small, $< 1/4$ as long as apical bristles. Wing with very short costal spines, hardly differentiated from costal setae. Third costal section ca. $3/4$ as long as 2nd. Vein R_{2+3} gently curved. Crossvein r-m at apical $2/3$ of cell 1st M_2 , lobe of cell Cu short, ca. $1/4-1/5$ as long as vein Cu_{1+1stA} (Fig. 82b).

Etymology. The generic epithet combines the Greek words *saukros*, "graceful" or "pretty," and *myio*, "fly," to refer to this handsome animal.

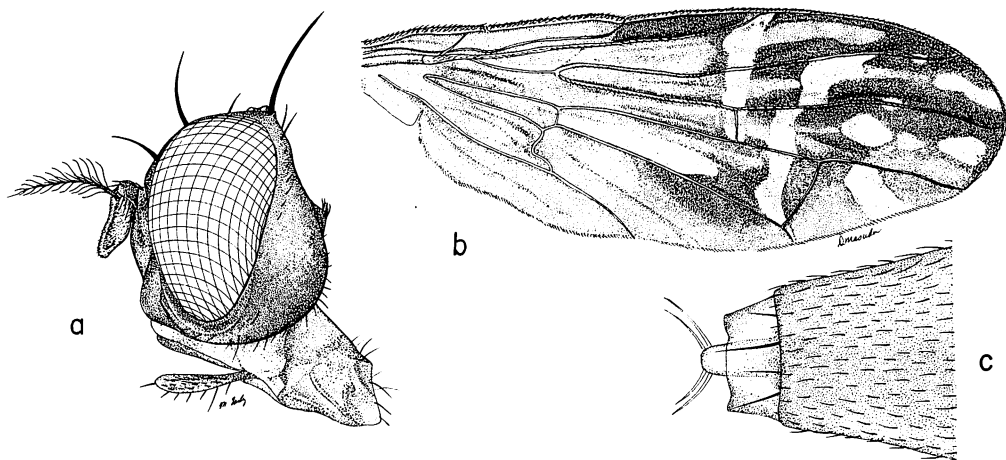


FIG. 82. *Saucromyia bicolor*: a, head; b, wing; c, ♀ ovipositor.

***Saucromyia bicolor* Hardy, new species**

Fig. 82

Diagnosis. This species can be readily differentiated by the characters of the genus. The head and body are shining black except for a tinge of rufous on the middle of the front and bright yellow sterno- and hypopleura.

♀. *Head.* As in Fig. 82a. Antennal grooves ca. $2/3$ length of face, face raised on upper median portion. Ocellar bristles absent, postocellars small, setalike, equal in size to other setae on vertex. Outer vertical bristles small, poorly developed, ca. $2\times$ longer than occipital setae. Antennae yellow, tinged brown to rufous, especially on basal segments, 3rd segment ca. $2\times$ longer than wide. Clypeus dark brown to black with a tinge of rufous in ground color. Palpus ca. $3\times$ longer than wide, yellow-rufous, rather long bristlelike setae along ventral and apical margins. *Thorax.* As noted above, inner scapular bristles moderately developed, almost equal in size to humerals; outer scapulars absent. Halter yellow, tinged lightly with brown. *Legs.* Coxae, trochanters, and femora bright yellow, tinge of brown on apices of last. Tibiae and tarsi predominantly dark brown. Inner spur at apex of mid tibia nearly $2/5$ as long as outer spur. *Wing.* As noted above and as in Fig. 82b. Rs bare. *Abdomen.* All terga and 8th segment entirely polished black, sterna rufous. Basal segment of ovipositor ca. $2\times$ longer than wide, almost equal in length to terga 3-5. Piercer blunt at apex, 2 pairs of large preapical setae (Fig. 82c).

Lengths: body, without ovipositor, 8.25 mm; wing 9.0 mm.

♂. Unknown.

Holotype ♀, INDONESIA: SULAWESI: Noongan, 50 km S of Manado, 1200 m, 2-10.XII.1973 (H. Kurahashi) (BPBM 13,365).

Etymology. The name combines the Latin *bi*, "2," with "color," and refers to the conspicuous bicolored body.

***Sophiropsis* Hardy, new genus**

Type of genus: *Termitorioxia improbata* Hering, 1941.

This genus fits in the *Acanthonevra* genus group by having only 1 pair of inferior

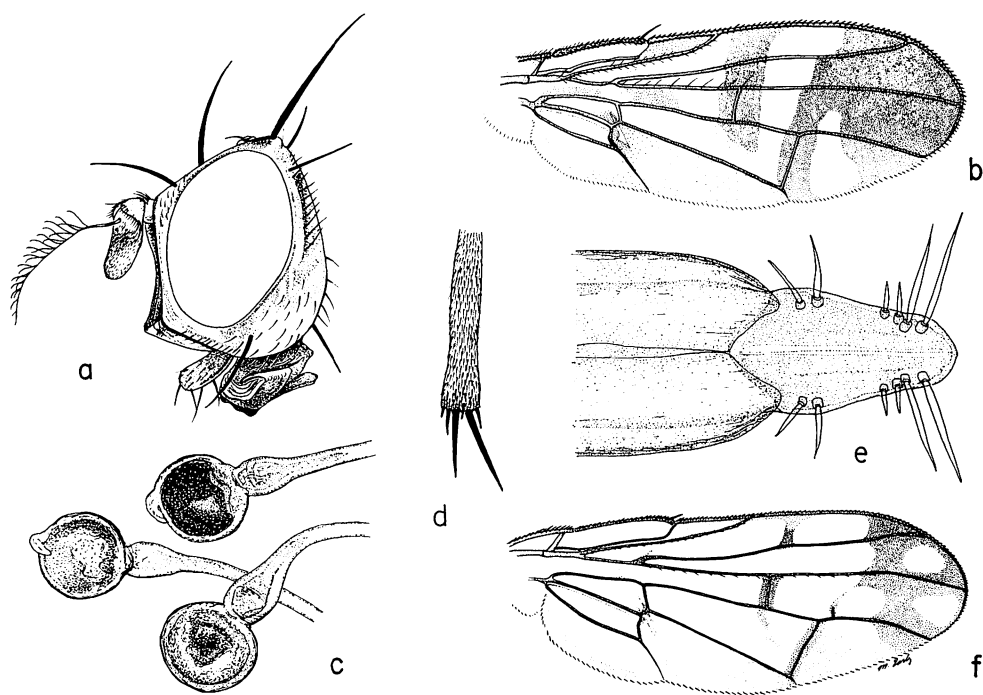


FIG. 83. a-e, *Sophiopsis improbata*: a, head; b, wing; c, ♀ spermathecae; d, apex of mid tibia, dorsal view; e, ♀ apex of piercer. f, *S. calcaratus*, wing.

fronto-orbital bristles; it differs by the character of the arista (as noted below and Fig. 83a); by having only 1 superior fronto-orbital; 2 strong spurs on the mid tibia; cell Cu not distinctly lobate; and by the markings of the wing (Fig. 83b).

Sophiopsis closely resembles *Sophira* (*Parasophira*) Hardy but the 2 are not closely related. It differs from *Sophira* by having 6 scutellar bristles; the scutellum bare, lacking fine setulae; the arista bare ventrally, with 2 rows of dorsal hairs; a sternopleural bristle; dorsocentral bristles anterior to the supraalars; 1 pair of superior fronto-orbital bristles; the mid tibia with 2 strong apical spurs; and cell Cu acute at lower apex (Fig. 83b), not distinctly lobate.

Head (Fig. 83a) with face gently concave in middle. Ocellar bristles setalike, interfrontal area with fine inconspicuous pale setae. Body and legs almost entirely yellow to rufous. Pteropleural and intrapostalar bristles absent. Mid tibia with 3 black posterodorsal bristles in middle, hind tibia with 3 short black anterodorsals in middle, 1 anteroventral at apical 2/3. Hind femur with 2 short, preapical, dorsal bristles. Wing as noted above and in Fig. 83b, with vein R_{2+3} straight, r-m at about apical 2/3 of cell 1st M_2 and cell Cu pointed but not distinctly lobate on lower apex.

Etymology. The generic epithet combines the Greek *opsis*, "having the appearance of," with *Sophira*. The gender is feminine.

Two species fit here.

Sophiropsis calcarata Hardy, new species

Fig. 83f

Diagnosis. This species differs from *S. improbata* (Hering) by having the thorax entirely yellow to rufous; the front with a pair of submedian black spots opposite the inferior fronto-orbitals; the apical portion of the abdomen polished black; the wing with a short spur vein on the upper side of M_{1+2} ; and the wing markings very different (Fig. 83b, 83f).

♀. Fits description of *S. improbata* except as noted above. Basal $3/5$ of wing tinged yellow. Cell Sc yellow-brown. Short vertical streak of brown in lower median portion of cell R_1 in line with narrow brown vitta on r-m crossvein extending into cell 1st M_2 . Spur vein on upper side of vein M_{1+2} just beyond m crossvein. Brown mark on short spur vein nearly connected with brown vitta on m crossvein. Apex of wing brown, hyaline mark in apex of each cell R_3 and R_5 (Fig. 83f). Seventh abdominal segment, base of ovipositor and most of terga 5 and 6 polished black, strikingly contrasting from pale yellow remainder of abdomen. Type with terga 5-6 black, slight marking of yellow on median portion of apex and base of 5th tergum. Paratype with prominent bright yellow median vitta on terga 5 and 6, narrow black apical margin on 6.

Lengths: body, excluding ovipositor, 7.2-7.6 mm; wing 8.8 mm.

♂. Unknown.

Holotype ♀, PAPUA NEW GUINEA: Mt Kaindi, 2350 m, 24.VI-VII.1973, malaise trap (T. Tigner) (BPBM 13,366). One ♀ paratype, same data as type (UH).

Etymology. The specific epithet combines the Latin words *calcar*, "spur," and *atus*, "provided with." It refers to the presence of a spur vein on vein M_{1+2} .

Sophiropsis improbata (Hering), new combination

Fig. 83a-e

Termitorioxia improbata Hering, 1941, *Siruna Seva* 3: 22. Type-locality: "Kaiserin-Augusta-Fluss-Expedition, Deutsch-Neu-Guinea" [May River, Papua New Guinea]. Type ♀ in ZMHB.

Diagnosis. A very striking, almost all yellow species, known only from the female. It can be readily differentiated by the characters given for the genus.

Head (Fig. 83a) with face gently concave in middle. Third antennal segment ca. $2\times$ longer than wide, ca $2/3$ length of face. Thorax yellow to rufous, narrow black vitta down middle from behind scapular bristles to ca. level with postalar. Another narrow black vitta on side from behind suture to inner postalar bristle, dark brown to blackish line on extreme lateral margin of mesonotum from behind humerus to wing base. Secondary scutellars $1/4-1/3$ as long as apical bristles. Legs as noted above, segments rather slender, apex of mid tibia as in Fig. 83d. Wing as noted above and as in Fig. 83b. Basal $1/2$ hyaline to subhyaline, tinged yellow in cell Sc. Broad dark brown crossband from costa in cell R_1 across r-m crossvein into upper $1/2$ of cell 1st M_2 , apical portion of wing beyond level with m crossvein dark brown, hyaline wedge through cell 2nd M_2 into lower $1/2$ of cell R_5 . Abdomen yellow. Basal segment of ♀ ovipositor short, scarcely longer than wide, in situ ca. equal in length to terga 5-6. Apex of piercer as in Fig. 83e, ca. $1/2$ as long as segment 8. Three round spermathecae with bulbous necks, small curved projections on apices (Fig. 83c).

Lengths: body, without ovipositor, 7.5 mm; wing 8.0-9.0 mm.

Distribution. Over island of New Guinea.

Specimens examined. Holotype ♂. PAPUA NEW GUINEA: 1♀, Kiunga, Fly Riv, 26–30.VII.1957 (W.W. Brandt); 2♀, Karimui, 1080 m, 14.VII.1963 (J.L.Gressitt); 1♀, Robbies Crk, nr Bulolo, 20.VII.1979 (H. Guagi). IRIAN JAYA: Vogelkop, Fak Fak, S Coast of Bomberai, 100–700 m, 8.VI.1959 (T.C. Maa).

Remarks. The markings of the metanotum are variable. In some specimens the vittae are pale brown, the lateral vittae occasionally lacking. In others the metanotum is entirely yellow with but faint indications of vittae.

Stigmatomyia Hardy, new genus

Type of genus: *Stigmatomyia arcuata*, n. sp.

Diagnosis. This genus runs near *Acanthonevra* Macquart by having only 1 pair of inferior fronto-orbital bristles in combination with 1 strong spur on the mid tibia and veins R₁ and R₄₊₅ setose above. The genera are not related. In general facies it appears to resemble species of the *Diarrhegmoides* complex of genera but the actual relationships are questionable. *Stigmatomyia* differs from *Acanthonevra* by having distinctive wing markings and venation (Fig. 84f), with 2 brown arches over the apical 2/3 of wing; veins R₂₊₃ and R₄₊₅ arcuate in middle; crossvein r-m at middle of cell 1st M₂; the lobe of Cu long, longer than Cu_{1+1stA}; the costal spine strong; propleuron with row of 5–8 bristlelike hairs; a strong pteropleural bristle and small intrapostalar; the front bare or with only fine inconspicuous pale hairs, no distinct setation; and the front legs of the male inornate.

Head (Fig. 84b) with eyes almost round. Arista long plumose, row of moderately long rays along inner margin. Third antennal segment broadly rounded, ca. 2× longer than wide, 2/3 length of face. Face vertical on upper 2/3, protruded on lower margin. Occipital bristles setalike. Secondary scutellars rather small, ca. 1/3–1/2 as long as apical bristles; scutellum flat, completely bare except for marginal bristles. Dorsocentral bristles in line with supraalars. Pteropleural bristles strong, stronger than meso- or sternopleurals, equal in size to anterior notopleurals.

Etymology. The generic epithet combines the Greek words *stigmato*, “mark,” or “brand,” and *myio*, “fly”; it alludes to the distinctive markings on the wings. The gender is feminine.

Stigmatomyia arcuata Hardy, new species

Fig. 84

Diagnosis. ♂. This species can be readily differentiated by the generic characters.

Head. Pale yellow, almost white, ocellar triangle black, brown streak down middle of front, brown band across upper 1/3 of face, prominent brown mark on eye orbit opposite base of antenna, large dark brown to black triangle on side of upper occiput. Third antennal segment mostly brown, basal portion rufous. Head subquadrate, face gently concave in lateral view, straight on upper 2/3, slightly projected on lower margin (Fig. 84b). Front almost bare, devoid of conspicuous setae, inferior fronto-orbitals convergent, near lower 1/4 of front. Superior fronto-orbitals well spaced, lower slightly below middle of front. Ocellar bristles tiny, ca. equal in size to setae on upper vibrissal area of face. Postvertical bristles rather strong, equal in size to outer verticals and upper superior fronto-orbitals. Setae at back of occiput surrounding cervix pale yellow to white. Palpus pale yellow, faint tinge of brown at apex. Lower occiput, gena, and lower side of face black setose. *Thorax.* Mesonotum polished black, broad pale yellow gradually tapered vitta down median portion from anterior margin to ca. level with prescutellar bristles.

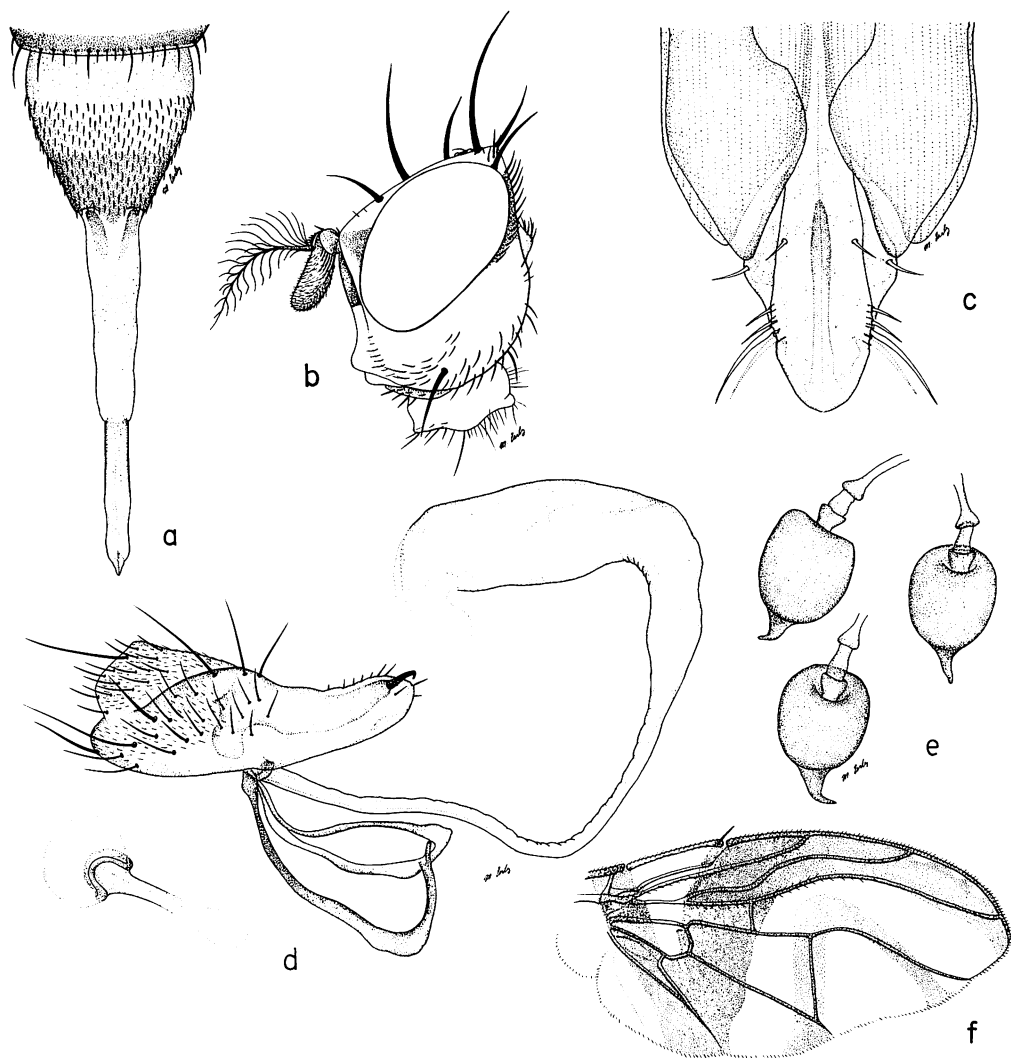


FIG. 84. *Stigmatomyia arcuata*: a, ♀ ovipositor; b, head; c, ♀ apex of piercer; d, ♂ genitalia; e, ♀ spermathecae; f, wing.

Indistinct yellow to rufous streak on side ca. in line with dorsocentral bristles, from just in front of suture almost to level with dorsocentrals. Humerus white, continuous white band down side of mesonotum over top 1/2 of each notopleuron to posterior margin, continuous with white scutellum; anterior margin of scutellum narrowly dark brown to black. Pleura yellow, dark brown to black band on side from cervical sclerite, across propleuron, spiracle, upper portion of mesopleuron and lower margin of notopleuron to wing base, another broad dark brown to black band extending slightly obliquely from upper anterior portion of sternopleuron across lower portions of meso- and pteropleura, over meta- and hypopleura, connecting with polished black coloring of metanotum and postscutellum. Intrapostalar bristles ca. 2/3 as long as secondary

scutellars. *Wing.* As noted above and as in Fig. 84f. Extreme base, alula, and anal lobe hyaline, large hyaline wedge from costal margin through 2nd costal margin in apex of cell R_3 , large broad hyaline loop through apical 1/2 of wing, defined by dark markings, large hyaline mark from posterior margin through most of cell 2nd M_2 . Markings of wing mostly dark brown on basal 1/2, yellow to pale brown apically. (In holotype a narrow faint yellow-brown line connects 2 brown arches at a level slightly beyond m crossvein. On other specimens lower loop isolated as in Fig. 84f.) Second costal section ca. 1/4 longer than 3rd, 4th and 5th sections ca. equal in length. Vein R_{4+5} and last section of veins M_{1+2} gently arcuate. *Legs.* Mostly pale yellow, mid and hind coxae and hind femur mostly brown to blackish. Front femur with 2 irregular rows of short, black bristlelike setae along posterodorsal surface, single row of 4 moderately long posteroventral bristles on apical 1/2, 2 or 3 thin nearly hairlike bristles on basal portion. Mid tibia with 1 large apical spine and ring of short black spines, 1 of these ca. 1/2 size of large spine. Hind tibia with row of 7 or 8 short black posterior bristles along median portion. *Abdomen.* Mostly polished black, gray pollinose bands across apices of terga 2-4. Base of abdomen yellow, incomplete brown band across middle of 2nd tergum. Cercus rather small, ca. equal in length to epandrium. One elongate hooklike tooth at apex of lobe of 10th sternum (Fig. 84d). Aedeagus greatly enlarged, apical portion ca. equal in size to epandrium and surstylus. Ejaculatory apodeme poorly developed (specimen possibly teneral).

Lengths: body 6.0 mm; wing 6.5 mm.

♀. As ♂. Basal segment of ovipositor short, broad, mostly yellow, brown on apex, ca. as wide as long, ca. equal in length to terga 4-6. Ovipositor as in Fig. 84a. Piercer rather short, thick, blunt at apex (Fig. 84c). Three oblong spermathecae, nipplelike points at apices (Fig. 84e).

Lengths: body, excluding ovipositor, 5.5 mm; wing 6.0 mm.

Holotype ♂, PAPUA NEW GUINEA: nr Bulolo, 29.VII.1979 (H. Roberts) (BPBM 13,367). *Allotype* ♀ (BPBM), Robbies Crk, nr Bulolo, under *Musa* leaf, 29.VII.1979 (Roberts). 3♂, 1♀ paratypes: 2, same data as type and allotype, 1, Kaisenik, nr Bulolo, in montane forest, 20.I.1979 (Roberts); 1, Mt Susu, nr Bulolo, in shrub layer, lowland rain forest, 7.III.1979 (Roberts). Paratypes in FRSB and UH.

Etymology. The species epithet is from the Latin *arcuatus*, "bent like a bow," and refers to the arcuate veins in the anterior portion of the wing.

Genus *Termitoriox*a Hendel

Rioxa (*Termitoriox*a) Hendel, 1928, Entomol. Mitt. 17: 351. Type-species: *Rioxa termitoxena* Bezzi, 1919, by monotypy.

This genus is characterized by having only 2 pairs of frontal bristles, 1 superior fronto-orbital at upper 1/4 of front and 1 inferior near lower margin; the antennae distinctly separate at bases, by almost width of 1st segment; interfrontal area with abundant erect setae; 2 strong subequal spurs at apex of the mid tibia; 6 strong, equal-sized scutellar bristles; the face vertical, slightly produced on lower margin; the dorso-central bristles well behind supraalars just in front of a level between the postalars; the scutellum setose, with a scattering of erect setae, especially on sides. The ocellar bristles are small, rather setalike in the type, ca. equal in length to the occipital row of setae. It appears to fit nearest to *Heringomyia*, n. gen., and is differentiated by the characteristics discussed under that taxon.

Front femur with ca. 6 posteroventral bristles on apical 1/2, 2 rows of bristles extending almost full length on dorsal surface. Mid tibia with 4 rather stout, black, posterior bristles at middle,

hind tibia with row of 8–10 short black posterodorsal bristlelike setae in middle, no posteroventral bristles. Intrapostalar bristles well developed in ♀ of type-species, poorly developed, setalike in ♂ studied. Pteropleural bristles strong, equal or larger than meso- and sternopleural bristles. Wing with basal portion sybhyaline, apical 2/3 mostly dark brown. Prominent hyaline wedge from costa through cell R_1 ; type-species with 2 isolated hyaline spots in cell R_5 , 1 before and 1 after r-m crossvein. Also 1 isolated hyaline spot at apex of cell 1st M_2 , hyaline wedge from margin through most of cell 2nd M_2 . Third costal section ca. 2/3 as long as 2nd. Vein R_{2+3} straight. Vein R_{4+5} gently convex beyond r-m crossvein, r-m crossvein at ca. apical 2/3 of cell 1st M_2 . Lobe of cell Cu ca. 1/2 as long as vein Cu_{1+1stA} .

Biology. The type-species has been bred from galleries of *Mastotermes* in tree trunks in northern Australia (Hill 1921).

Two species are known, 1 in northern Australia, 1 in Nusa Tenggara, Indonesia.

Termitorioxia timorensis Hardy, new species

Fig. 85

Diagnosis. The unique male holotype from Timor closely resembles *T. termitoxena* from northern Australia. It differs from *termitoxena* by having the gena broad, equal in width to ca. 1/3 height (Fig. 85a); the male thorax yellow to rufous, without a pair of brown spots on the hind margin of the mesonotum behind area bounded by the dorsocentral and prescutellar bristles; a pair of brown spots at base of the scutellum and the sides of the mesonotum polished black; and a hyaline wedge continuous through cell 2nd M_2 and cell R_5 almost to vein R_{4+5} , rather than in 2nd M_2 and isolated from spots in cell R_5 .

♂. *Head* (Fig. 85a). Front thickly erect setose, 1 pair of small inferior fronto-orbital bristles near lower 1/4. Face vertical, gently produced on lower edge just above oral margin. In frontal view, face raised in median portion into flat carina, antennae rather widely separated at bases, space between almost equal to width of 1st segment. Antennal grooves prominent, 3/4 length of face. Ocellar bristles setalike, distinctly smaller than those of occipital row. Yellow except for black compound eyes and ocellar triangle. *Thorax.* All yellow, densely black setose on mesonotum, sparse, erect, dark-colored setae on sides of scutellum. Presutural bristles ca. 2/3 as long as notopleurals. Dorsocentral bristles just in front of level between postalar. No distinct intrapostalar present, slightly larger seta present on side in this position. Six scutellar bristles of equal

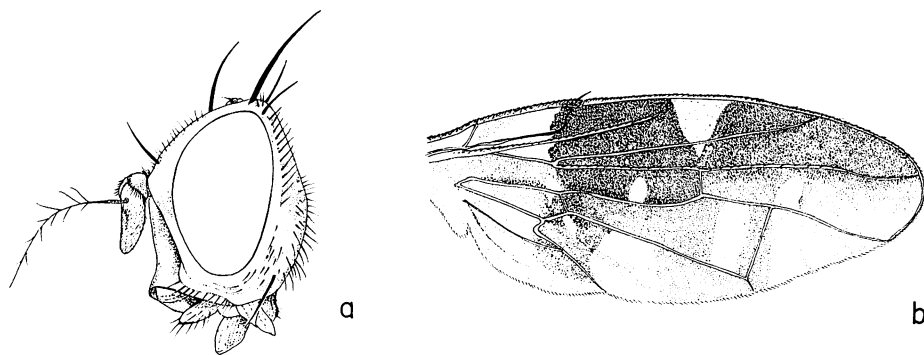


FIG. 85. *Termitorioxia timorensis*: a, head; b, wing.

length. *Legs*. Entirely yellow. Front femur with row of ca. 6 posteroventral bristles on apical 1/2, 2 rows of mixed dark brown and pale brown dorsal bristles. Mid tibia with 4 short, black, posterior bristles at middle. Spurs at apex of mid tibia apparently broken on the type, 1 short spinule present (*T. termitoxena* has 2 large, subequal apical spurs). Hind tibia with row of ca. 10 short dark brown posterodorsal bristles on median portion, no posteroventral bristles. Hind femur with ca. 4 short, black, preapical dorsal bristles. *Wing*. Subhyaline, tinged yellow on basal portion basad of forking of veins R_{2+3} and R_{4+5} ; apical portion of 2nd costal section and all of 3rd (cell Sc) dark brown. Hyaline wedge from costa in cell R_1 extending ca. 2/3 distance through cell R_3 . Otherwise as noted above and as in Fig. 85b. *Abdomen*. Mostly shining black, 1st 2 terga and apicomedian margins of 3 and 4 yellow, 3rd yellow, tinged lightly with brown on median portion. Genitalia not relaxed for study.

Lengths: body and wing each 6.25–6.5 mm.

♀. Unknown.

Holotype ♂, INDONESIA: TIMOR: Nusa Tenggara, Koepang, XII.1931 (Handschin) (BPBM 13,368).

Etymology. The species is named after the island of Timor.

Genus *Themara* Walker

Themara Walker, 1856, J. Proc. Linn. Soc. Lond., Zool. 1: 33. Type-species: *Themara ampla* Walker, 1856, by monotypy.

This genus differs from other Acanthonevrini by having vein M_{3+4} and the straight portion of Cu setose above; vein R_{2+3} distinctly undulate; the wings predominantly brown, usually with hyaline or yellowish wedges from the anterior and posterior margins (Fig. 86c); only 1 pair of inferior fronto-orbitals, sometimes a weak secondary pair, and 2 pair superior fronto-orbitals, lower superior near middle of front; the ocellar bristles small, setalike; and the pteropleural bristles weak and poorly developed.

Head broad, at least 2× wider than long [except in *T. hirsuta* (Perkins)], in most species eyes of ♂ borne on prominent stalks (Fig. 89a). Face concave in lower median portion, epistomal margin protruded. Secondary scutellar bristles weak, scutellum bare dorsally. Dorsocentral bristles well behind supraalars, intrapostalars absent. Crossvein m usually setose ventrally. Costal spines small, ca. 2× as large as costal setae. One strong spine at apex of mid tibia. Basal segment of ♀ ovipositor rather short, scarcely longer than wide, subequal in length to terga 5–6. Piercer blunt at apex, equal in length to ovipositor base.

The biology of *Themara* is unknown. Adults of *T. hirsuta* (Perkins) have been collected on bark of felled trees.

Eight species are presently reported from the region covered in this study. The status of several of these is questionable and too few specimens have been examined to obtain a clear understanding of the taxonomic validity of some of the thoracic and wing pattern characters. It is probable that more synonyms will be discovered when larger series of specimens are examined and ecological data are available.

KEY TO SPECIES OF *THEMARA* KNOWN FROM INDONESIA
(INCLUDING ALL OF BORNEO) AND NEW GUINEA

1. Wing with conspicuous hyaline or yellow wedges from both anterior and posterior margins (Fig. 89b) 2
 Without hyaline wedges extending into brown field from anterior margin; wing hyaline along anterior and posterior margins (Fig. 90) or with hyaline longitudinal streaks at apex (Fig. 87) 7
- 2 (1). Apical portion of wing entirely dark brown 3
 Apical portion of wing broadly subhyaline or yellowish, contrasting with dark brown coloring; ♂ eyes stalked; thorax entirely rufous . . . (Philippines; Solomon Is) **lunifera**
- 3 (2). Hyaline mark in cell Sc large, filling most of cell, extending to or beyond vein R₂₊₃ (Fig. 86c); base of wing and costal cells yellow; front legs of ♂ showing no sexual dimorphism 4
 Hyaline mark in Sc small, occupying only base, extending scarcely into cell R₁; base of wing and costal cells hyaline, continuous hyaline mark from costa in middle of cell 2nd M₂ to vein R₄₊₅ (Fig. 88a); scutellum mostly brown to black, yellow at apex; ♂ front femur densely bristled on posteroventral surface, front tibia with abundant, erect, bristlelike hairs on ventral surface (Fig. 88b) 6
- 4 (3). Wing with prominent round hyaline spot in cell R₅ just below convexity of vein R₄₊₅; mesonotum vittate; side of ♂ head prolonged, eyes on prominent stalks (Fig. 89a) 5
 Cell R₅ typically lacking hyaline spot (Fig. 86c); no distinct vittae on mesonotum; ♂ eyes not stalked . . . (Borneo; Malaysia; Singapore; Sumatra) **ampla**
- 5 (4). Mesonotum with 5 brown longitudinal vittae; ♂ front coxa and prosternum black; costa abnormally thickened between R₁ and R₄₊₅ (Fig. 91) . . . (Java; Sumatra) . . . **maculipennis**
 Lacking median vitta on mesonotum; ♂ front coxae and prosternum all yellow; R₂₊₃ rather gradually curved, entering costa nearer to R₄₊₅ than to R₁; costa not abnormally thickened (Fig. 89b) . . . (widespread throughout Oriental Region) . . . **hirtipes**
- 6 (3). Face yellow, tinged brown; legs yellow to rufous, hind tarsi brown; 2 submedian vittae on mesonotum . . . (Sarawak) **hirsuta**
 Face entirely black; legs predominantly dark brown to black; mesonotum with median longitudinal vitta . . . (Sarawak) **nigrifacies**
- 7 (1). Costal cells and cell R₁ narrowly hyaline along wing margin; posterior margin of wing subhyaline, no hyaline streaks through median portion of wing (Fig. 90) . . . (Sumatra) **jacobsoni**
 Not hyaline on anterior or posterior margins of wing; longitudinal hyaline streaks through cells R₅ and M₂ (Fig. 87) . . . (Engano I, SW of Sumatra) **extraria**

***Themara ampla* Walker**

Fig. 86

Themara ampla Walker, 1856, J. Proc. Linn. Soc. Lond., Zool. 1: 33. Type-locality: Singapore. Type ♂ in BMNH.

Themara microcephala Hering, 1939, Verh. VII Int. Kongr. Entomol. 1: 175. Type-locality: Borneo. Type ♂ in MNHP. New synonymy based on study of types of both taxa.

Diagnosis. This species fits in the group of species that have hyaline marks on the anterior and posterior margins of wing. It differs by usually lacking a hyaline spot in

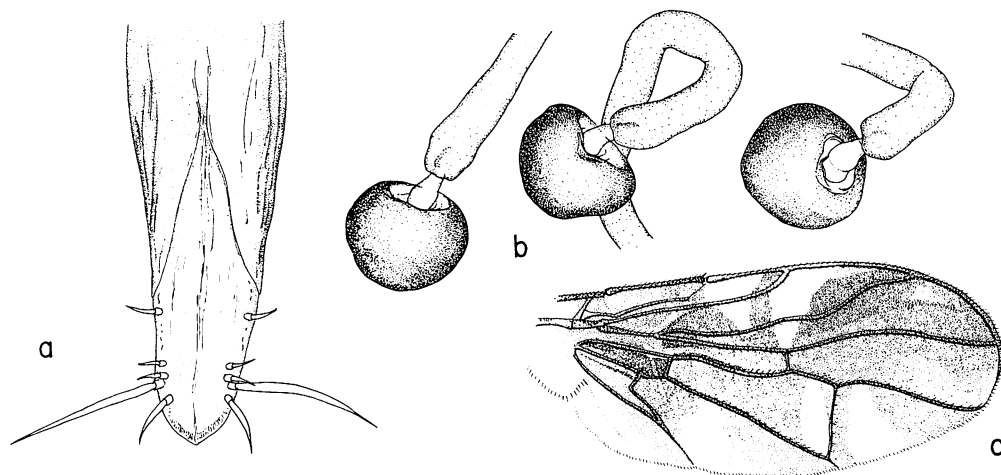


FIG. 86. *Themara ampla* Walker: a, ♀ apex of piercer; b, ♀ spermathecae; c, wing.

cell R_5 beyond the r-m crossvein, by having the mesonotum not vittate, predominantly yellow except for a broad, dark brown to black posterior margin, and by having eyes of males not stalked. A specimen from Penin. Malaysia has a hyaline spot in cell R_5 beyond r-m crossvein but otherwise the species fits the characters of *ampla*.

Fits characteristics of most congeners. A weak pair of inferior fronto-orbital bristles just below main bristles. Thorax entirely rufous, posterior border of mesonotum brown to black, basal margin of scutellum narrowly brown to black, side of metanotum brown to black. Dorsocentral bristles halfway between supra and postalar. Wing as noted above and in Fig. 86c, pale markings basad of r-m crossvein tinged yellow. Abdomen mostly shining black, 1st tergum, base and apex of 2nd, apex of 3rd yellow. Basal segment of ovipositor yellow, slightly shorter than combined lengths of terga 5 and 6. Apex of piercer as in Fig. 86a, spermathecae as in Fig. 86b.

Lengths: body and wing each 8.0–10.0 mm.

Distribution. Singapore, Sumatra, Sarawak, Sabah, and West Malaysia.

Specimens examined. Holotype ♀ and 4 specimens in BMNH, from Borneo and Sumatra; also Hering's type (MNHP). Twelve specimens with following data from MALAYSIA. SARAWAK: Santubong, 30 km N of Kuching, 19–20.XI.1975 (S. Shinonaga); Merirai Val, 6.VIII.1955 (T.C. Maa); 1st Div, Semongoh For. Res., 1°25'N 110°17'E, 15–19.XI.1976 (P.S. Cranston). SABAH: Forest Camp, 19 km N of Kalabakan, 60 m, 22.X.1962 (K.J. Kuncheria); Bengen Riv, Tabang, 125 m, 4.X.1956 (A.M.R. Wegner). PENIN. MALAYSIA (W): Kuala Tahana, Pahang, 15–16.XII.1958 (L.W. Quate).

Remarks. Walker (1856a) described the male from a single specimen from Singapore, then later [Walker (1856b)] he stated that the specimen was “the female” of *Achias maculipennis* Westwood; this is incorrect. Walker's type is a male, as originally described and belongs in the group of species with male eyes not stalked.

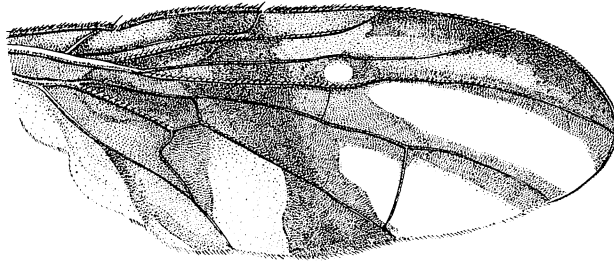
FIG. 87. *Themara extraria*, wing.***Themara extraria* Hering**

Fig. 87

Themara extraria Hering, 1952, *Treubia* 21: 275. Type-locality: Engano Island, nr Sumatra. Type ♀ in ZMUA.

Diagnosis. The exact position of this species is questionable. It differs from all known *Themara* by the distinctive wing markings: predominantly dark brown with brownish yellow markings and a hyaline longitudinal band through cell R_5 beyond r-m crossvein; a round hyaline spot filling cell R_3 dorsad of r-m crossvein; and a hyaline mark from margin in cell 2nd M_2 extending into 1st M_2 almost to level of r-m crossvein.

♀. Head yellow to rufous, front wider than long, equal or wider than eye. Thorax largely yellow, tinged brown, 3 complete dark brown to blackish longitudinal vittae fused posteriorly; hind portion of mesonotum and all of scutellum, except narrow yellow apex, shining black. Also metanotum and hypopleuron mostly black. Legs yellow, tinge of brown on front and hind tibiae. Wing marked as in Fig. 87. Predominantly dark brown, yellow-brown basally, through most of cell Sc extending through R_1 and middle part of R_3 ; other markings as noted above. Venation typical of genus. Abdomen mostly shining black, yellow on 1st tergum, basal margin of 2nd, and apical margin of 3rd; ovipositor yellow with tinge of brown at apex of basal segment.

Lengths: body and wings each 6.8 mm.

♂. Unknown.

Distribution. Sumatra.

Specimens examined. Holotype ♀.

Biology. The label on the type reads "Buah-buah" following the locality. This is the Bahasa Indonesian word for "fruits." It is not known whether or not it means the specimen was associated with fruits.

***Themara hirsuta* (Perkins)**

Fig. 88

Acanthoneura hirsuta Perkins, 1938, *Ann. Mag. Nat. Hist. Ser. 11*, 2: 407. Type-locality: Mt Dulit, Sarawak. Type ♂ in BMNH.

Diagnosis. This species differs from other known *Themara* by having the mark in cell Sc small, occupying only the basal portion of the cell and extending scarcely into cell R_1 ; by having the base of the wing and costal cells hyaline with a continuous

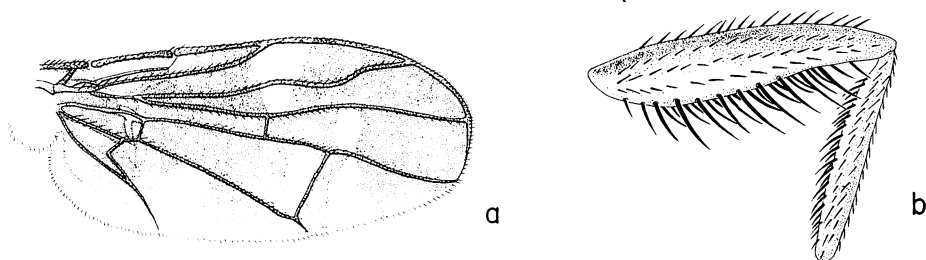


FIG. 88. *Themara hirsuta*: a, wing; b, ♂ front femur and tibia.

hyaline mark from the costa in the middle of cell 2nd M_2 to vein R_{4+5} (Fig. 88a); by having a more normally shaped head, with front narrower than the eye; and by having the front femur of the male densely bristled on the posteroventral surface and the front tibia with abundant erect bristlelike hairs over the ventral surface (Fig. 88b). Because of the ornamentation of the front legs of the male this species strongly resembles species of *Acanthonevra*; it differs from *Acanthonevra* species by having veins M_{3+4} and the basal section of vein Cu strongly setose above.

♂. Head just slightly higher than long in profile, occiput moderately swollen, face concave in lower median portion, epistoma projecting. Bristling fits characteristics of genus except moderately well developed secondary inferior fronto-orbital present, ca. $2/3$ as long as strong bristle. Ocellars small, ca. equal in length to occipital setae. Yellow except brown compound eyes and ocellar triangle. Third antennal segment ca. $2\times$ longer than wide, broadly rounded apically. Arista long plumose, row of moderately long hairs on inner margin. Thorax yellow, reddish brown markings on mesonotum, scutellum, and side of metanotum, tinge of brown on pleurotergon. Pair of submedian reddish brown vittae full length of mesonotum continuing onto scutellum, extending on side of posterior portion between prescutellar and inner postalar bristles, continuing anteriorly on side as short vitta ending just before suture. Scutellum yellow at apex, dark brown to slightly blackish on side, and yellow tinged brown on median portion. Secondary scutellar bristles ca. $1/4$ as long as apical pair. Bristling as normal for genus, dorsocentrals almost halfway between supra and postalar bristles, pteropleurals ca. $2/3$ as long as longest mesopleural. Legs yellow, tinge of brown basally on mid and hind femora and hind tibia. Front femur slightly swollen, row of ca. 10 strong posteroventral bristles at middle, anteroventral bristle at basal $1/3$. Wing mostly dark brown, hyaline at extreme base, through 1st costal, and most of 2nd costal cell; hyaline spot in base of cell Sc extending slightly into cell R_1 , large triangle in cell R_1 to vein R_{4+5} at level with r-m crossvein; transverse hyaline mark from costa in middle of second M_2 to vein R_{4+5} ; hyaline mark in apex of cell 1st M_2 , another from costa through posterior portion of cell M_4 to vein M_{3+4} (Fig. 88a). Crossvein m bare. Apex of 2nd costal cell brown, basal portion tinged brown. Third costal section (cell Sc) subequal in length to 2nd section. Vein R_{2+3} strongly undulate, veins R_{4+5} and M_{1+2} distinctly divergent beyond r-m crossvein. Crossvein r-m near apical $2/3$ of cell 1st M_2 . Abdomen yellow-rufous, tinged brown to blackish, without distinct markings.

Lengths: body and wings each 5.75–6.0 mm.

♀. As ♂ except markings more distinct, shining black; 4 black vittae on mesonotum, lateral pair abbreviated, ending before suture; scutellum shining black, apex yellow. Pleura almost entirely dark reddish brown, yellow along top edges of pro-, meso- and pteropleuron. Abdomen

mostly shining black, yellow on 1st tergum and on basal and apical margins of 2nd. Basal segment of ovipositor shining black, tinged reddish at apex, equal in length to terga 5+6.

Lengths: body and wings each 6.5–7.0 mm.

Distribution. Sabah.

Specimens examined. Type ♂ and 1 paratype. Also the following. MALAYSIA: SABAH: 1♂, Bundu Tukan, 18.II.1959 (T.C. Maa); 1♀, Tenompok, 30 mi [48 km] E of Jesselton, 1460 m, 2–4.II.1959 (Maa); 1♂, 1♀, Tenompok, Mt Kinabalu, 2.XI.1958 (L.W. Quate & Maa).

Biology. Adults collected on bark of felled trees.

***Themara hirtipes* Rondani**

Fig. 89

Themara hirtipes Rondani, 1875, Ann. Mus. Civ. Storia Nat. Genova 7: 435. Type-locality: Sarawak. Type ♂ in MSNG.

Themara enderleini Hering, 1938, Dtsch. Entomol. Z. 1938: 409. Type-locality: Soekaranda, Sumatra. Type ♂ in DEI.

Themara palawanica Hering, 1938, Dtsch. Entomol. Z. 1938: 410. Type-locality: Binaluan, Palawan, Philippines. Type ♂ in ZMHB.

Themara yunnana Zia, 1963, Acta Entomol. Sinica 12: 646. Type-locality: Xi-Sang-Ban-N, Yunnan, China. Type ♂ in IZAS.

For discussion of synonymies refer to Hardy (1974: 89).

Diagnosis. This species is characterized by conspicuous hyaline or yellowish wedges extending from both the anterior and posterior margins of the wing, a round hyaline spot in cell R_5 just below convexity of vein R_{4+5} , and the eyes of male, which are borne on prominent stalks (Fig. 89a). It fits very close to *T. maculipennis* (Westwood) but lacks a median brown vitta on the mesonotum; the male has a narrow reddish brown band across the face at level with the epistomal margin, and the front coxa and prosternum are all yellow; vein R_{2+3} curves more gradually to the costa and ends in the margin nearer to vein R_{4+5} than to R_1 ; and the costal margin is not abnormally thickened beyond tips of veins R_1 and R_{4+5} . The eye stalks are usually longer and more slender,

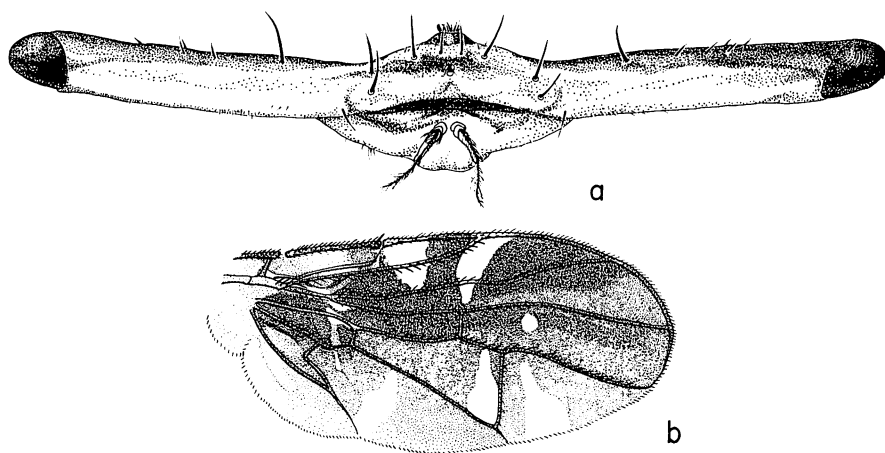


FIG. 89. *Themara hirtipes*: a, ♂ head, front view; b, wing.

being the longest known in the genus. Considerable variation has been seen in the development of the brown mesonotal vittae, probably depending upon the degree of tenerality. The length of the eye stalk varies considerably. Typically the head is 8-10× wider than long (Fig. 89a) but I have seen specimens that have the head scarcely over 3× wider than long.

Predominantly yellow to rufous species; 4 longitudinal brown vittae down mesonotum, median pair complete, lateral pair broadly interrupted at suture. Scutellum mostly yellow, brown to black on extreme lateral margin, below basal bristles, often with brown discoloration across basal margin. Secondary scutellars poorly developed, in some cases rather hairlike. Dorsocentral bristles halfway between anterior supraalar and postalar bristles. Abdomen mostly shining black, yellow on 1st and broad apices of 2nd and 3rd terga. Legs entirely yellow. Hind femur with 2 anteroventral and 1 posteroventral bristles on basal 2/5-1/3. Wing as noted above and as in Fig. 89b. Nothing distinctive about ♀ ovipositor or genital characters.

Distribution. Widespread throughout the Oriental Region (ref. Hardy 1977: 69).

Specimens examined. A large number of specimens from throughout the range of this species, including a good series from a number of localities throughout northern Borneo (SARAWAK, BRUNEI, and SABAH) and JAVA.

***Themara jacobsoni* de Meijere**

Fig. 90

Themara jacobsoni de Meijere, 1916, Tijdschr. Entomol. 58 (Suppl.): 47. Type-locality: Simalur Island, nr Sumatra. Type ♂ in ZMHB.

Diagnosis. This species can be differentiated from all known *Themara* by the distinctive wing markings: wings entirely brown except for a narrow hyaline mark along the anterior margin through cells Sc and R₁; an oblong hyaline spot in cell R₅ immediately below the convexity of vein R₄₊₅; a small hyaline triangle from margin in cell 2nd M₂; and a broad hyaline border in cell M₄ (Fig. 90).

Eyes of ♂ moderately stalked, head ca. 4× wider than long. Front mostly reddish brown to blackish. Face yellow, complete brown band extending to eye margins just above level with epistomal margin. Thorax mostly brownish yellow, shining dark brown to black on posterior portion, scutellum shining black. Vein R₂₊₃ moderately undulate, ending in costa closer to vein R₄₊₅ than R₁. Costal margin not noticeably thickened between apices of veins R₁ and R₄₊₅. Legs entirely yellow. Abdomen polished black, yellow on 1st and hind margin of 2nd terga.

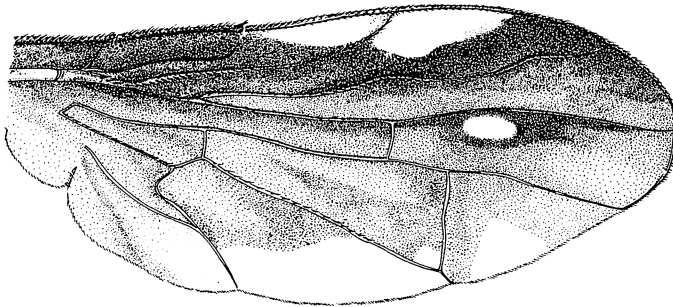


FIG. 90. *Themara jacobsoni*, wing.

Lengths: body 7.0 mm; wing 8.0 mm.

Distribution. Sumatra.

Specimens examined. Lectotype ♂, 1 paratype in ZMHB, and 3 paratypes in BMNH from INDONESIA: SUMATRA: Pulau Babi. Also 3 specimens from SUMATRA in RNHL.

***Themara lunifera* Hering**

Themara lunifera Hering, 1938. Dtsch. Entomol. Z. 1938: 408. Type-locality: Luzon Island, Philippines. Type ♂ in BMNH.

Diagnosis. This species can be readily differentiated from all known species from Indonesia and New Guinea by the hyaline apical portion of the wing and the entirely yellow thorax. The eyes are moderately stalked in the male, and the head is slightly $< 4\times$ wider than long. For further details and figures refer to the original description and Hardy (1974: 90).

Distribution. Philippines, Solomon Islands.

Specimens examined. Holotype ♂ and a series from throughout the Philippines (Hardy 1974: 90). 1♂, PNG: N SOLOMON IS: Bougainville (S): Kieta, 28.X.1959 (T.C. Maa).

***Themara maculipennis* (Westwood)**

Fig. 91

Achias maculipennis Westwood, 1848, Cabinet Orient. Entomol., p. 38, Pl. 18, Fig. 4. Type-locality: Java. Type ♂ in UMO.

Acanthoneura montina Enderlein, 1911, Zool. Jahrb. Abt. Syst. Geogr. Biol. Tiere 31: 416. Type-locality: Gette Gebirge, West Java. Type ♂ in PIZ. *New synonymy.*

Diagnosis. This species fits very close to *T. hirtipes* Rondani but it differs by having 5 longitudinal brown vittae on the mesonotum; vein R_{2+3} curving upward sharply, ending in costa slightly closer to vein R_1 than to R_{4+5} ; the front coxa of the male dark brown to black; a prominent black spot on the prosternum; a rather broad discoloration of reddish brown across the lower 1/2 of the face; and the costa abnormally thickened beyond veins R_1 and R_{4+5} (Fig. 91). It otherwise fits the description of *T. hirtipes*.

Distribution. Indonesia (Java, Sumatra), Sabah, Singapore, and India.

Specimens examined. Holotype of *montina*. INDONESIA: JAVA: 1♂, Soekaboemi, IV.1936 (E. LeMoult);

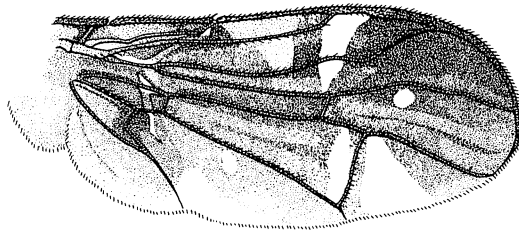


FIG. 91. *Themara maculipennis*, wing.

SUMATRA: 1♂ [no further data] (Muller). SINGAPORE: 1♂ [no further data] (Alfred Russel Wallace) (has 5 brown vittae on mesonotum but wing venation like *hirtipes*). SABAH: 2♀ [no further data]. (BMNH.)

Remarks. For further synonymy refer to Hardy (1977: 69). The records from India (Bezzi 1913: 117) have not been confirmed.

***Themara nigrifacies* (Perkins)**

Acanthoneura hirsuta var. *nigrifacies* Perkins, 1938, Ann. Mag. Nat. Hist. Ser. 11, 2: 409. Type-locality: Mt Dulit, Sarawak. Type ♂ in BMNH.

Diagnosis. The status of this taxon is questionable. It is topotypic with *Themara hirsuta*. Perkins described it as a variety based on 1 male specimen that differs by having the face entirely black, the legs dark brown to black except for the ventral surfaces of the front femora, and the tarsi and thorax mostly black: Perkins (loc. cit.) said "there appears to be three longitudinal black lines instead of two." Known only from the holotype.

Distribution. Sarawak.

Genus *Themarohystrix* Hendel

Themarohystrix Hendel, 1914, Wien. Entomol. Ztg. 33: 78; 1915, Ann. Hist. Nat. Mus. Natl. Hung. 13: 432.

Type-species: *Themarohystrix erinaceus* Hendel, 1914 [= *Strumeta helomyzoides* Walker, 1864], by original designation.

This genus fits nearest to *Themaroidopsis* Hering but differs by having the straight portion of vein Cu and all of M₃₊₄ setose above; by lacking hyaline marks through the middle or along the anterior margin of the wings; by having a strong anteroventral bristle at the apical 1/3 of the hind femur; and by other details given in the description below. It superficially resembles predominantly dark-winged species of *Themaroides*, but species of that genus have only veins R₁ and R₄₊₅ setose above; the leg bristling and other details are also different.

Head higher than long, face straight or nearly so, very slightly convex on upper median portion, oral margin not produced. Two pairs strong superior fronto-orbital bristles, evenly spaced on upper 1/2 of front, 2 pairs strong inferior fronto-orbitals close together near lower margin of front. Upper inferiors reclinate, lower pair cruciate (Fig. 95a). Ocellar bristle minute, setalike. Antenna short, scarcely 2/5 as long as front. Arista long plumose, longest plumes almost equal in length to 3rd antennal segment, row of moderate long hairs on inner margin. Thorax mostly yellow to rufous with varied brown to black vittae. Densely setose over dorsum of mesonotum and scutellum. Six strong, almost equal-sized scutellar bristles. Intrapostalar bristles strong. Moderately well-developed pair of secondary supraalars approximately opposite dorso-centrals. Two pteropleural bristles, 1 strong, longer than mesopleural. Propleuron with clump of black bristlelike hairs. Wing typically all brown to blackish, paler coloration in posterior portion of some species, a basomedian hyaline streak present in *alpina*, n. sp. Costal spine strong, greater in length than upcurved portion of vein Sc. Vein M₁₊₂ setose above almost to m crossvein. Crossvein r-m at middle of cell 1st M₂. Middle tibia with 2 strong apical spurs. Hind femur with a strong anteroventral bristle near apical 1/3, ca. 1/3 as long as tibia. Hind tibia with 2 small anteroventral bristles near middle. Mid tibia with row of ca. 5 small erect posterior bristles on basal 2/3, 1 moderately strong anteroventral bristle near middle. Mid femur with several erect anterior bristles in 2 rows beyond middle. Surstylus of ♂ moderately long, slender, conspicuous

in situ in lateral view; genitalia 5–6× longer than wide (Fig. 92e). Basal segment of ♀ ovipositor large, equal in length to terga 3–5, in some cases subequal to remainder of abdomen. Piercer short, rather thick, spearhead-shaped at apex, 2 large and 2 small preapical setae on side, 2 setae at base of apical portion (Fig. 94d). Eighth segment with abundant transverse rows of minute teeth. Three small round spermathecae, each with small nipple at apex.

No biological data are available for this genus. Specimens have been collected on vegetation at the edge of rain forest, along streams, under wild banana leaves, and on *Bambusa*.

Seven species are known; all are from the island of New Guinea.

KEY TO KNOWN SPECIES OF *THEMAROHYSTRIX*

1. Mesopleural black vitta continuous across spiracle and propleuron; face variable, without median black vitta; clypeus yellow 2
 Mesopleural vitta ending at spiracle; black longitudinal vitta down middle of face, extending to clypeus (*suttoni* complex) 7
- 2 (1). Face predominantly black or with narrow line of black down parafacial line and across oral margin; wing uniformly brown; sternopleuron largely black; scutellum yellow 3
 Face yellow; wing usually paler than above, subhyaline to hyaline posteriorly; sternopleuron largely yellow; scutellum black at least on basolateral margins 4
- 3 (2). Lower 1/2 of face black **nigrifacies, n. sp.**
 Face yellow with narrow brown to black vitta down parafacial line and on oral margin **perkinsi n. sp.**
- 4 (2). Wing dark brown except for subhyaline or slightly paler posterior portion; submedian brown to black vittae on mesonotum continuous from just behind level with humeral bristles to apex of scutellum; black marks on meso- and pteropleura isolated from black marking on sternopleuron 5
 Wing with base and posterior portion largely hyaline, hyaline longitudinal streak through middle nearly to level with m crossvein; submedian vittae interrupted at suture, extending only across laterobasal portions of scutellum to level with basal bristles; lateral vittae broadly interrupted behind humerus; humerus largely black, broad continuous black mark on side of mesonotum (Fig. 95b); black marks on meso-, pter-, and sternopleura joined **hyalina, n. sp.**
- 5 (4). With 5 longitudinal brown to black vittae on mesonotum 6
 With only 4 vittae, median vitta lacking **helomyzoides**
- 6 (5). Median vitta on mesonotum isolated from submedian pair, not broadened posteriorly (Fig. 94a); scutellum broadly yellow in middle; prosternum yellow; sternopleuron with narrow line of black on upper margin . . . (found below 1200 m) **flaviceps**
 Median vitta broadened posteriorly, joined with submedian vittae on posterior margin of mesonotum; prosternum black; scutellum nearly all black (Fig. 92d); sternopleuron with expanded black mark containing isolated yellow spot (Fig. 92a) . . . (occurs from 1200 m to at least 2000 m) **alpina, n. sp.**
- 7 (1). Sternopleuron with black vitta on dorsal margin, continuous across mesosternum 8
 Sternopleuron and mesosternum yellow; black median vitta on mesonotum, usually with faint brownish submedian vittae **variabilis, n. sp.**

- 8 (7). With 5 black vittae on mesonotum, submedian pair continuous on sides of scutellum; black facial mark linear, scarcely broader at oral margin; pteropleuron yellow **suttoni**
 Mesonotum and scutellum yellow except for black lateral margin of former; facial marks wedge-shaped, broad on oral margin; brown mark on lower margin of pteropleuron **bivittata, n. sp.**

Themarohystrix alpina Hardy, new species

Fig. 92

Diagnosis. This species fits close to *T. flaviceps* Malloch by having an all yellow face, 5 black vittae on the mesonotum, and the mesopleural vitta continuous across the propleuron. It differs by having the median vitta on the mesonotum broadened posteriorly and joined with the submedian vittae on the posterior margin; the scutellum nearly all black, with only a narrow yellow line down middle (Fig. 92d); the black marking on the sternopleuron expanded posteriorly, containing an isolated yellow spot (Fig. 92a); the black mark on the pteropleuron large and conspicuous, connecting with mark on the mesopleuron; the prosternum black; the gena all yellow, lacking a black mark below the eye margin; the wing uniformly dark brown with 4 small slightly paler round spots in the middle of field, circling the r-m crossvein; and abdominal terga 1-2 mostly black.

♂. Fits most characteristics of other species of genus. *Head.* As in Fig. 92b and as in diagnosis of genus, lacking black markings. *Thorax.* As noted above; mesopleural vitta continuous from lower margin of metapleuron across propleuron, spot of black on cervical sclerite. Sternopleuron mostly shining black with an isolated yellow spot (Fig. 92a), broadly blackened on dorsal and ventral margins, a yellow band separating these. Postscutellum with black posterior margin, metanotum tinged brownish red. Dorsum of thorax as in Fig. 92d. Dorsocentrals opposite supraalars. *Wing.* As noted above in diagnosis. *Abdomen.* First tergum brown to black except for narrow yellow lateral margins. Second tergum broadly dark brown to black on median portion, broadly yellow on side, narrowly so at apex. Abdomen otherwise subshining black except for narrow yellow lateral margins of all terga, apical margins of terga 3 and 4, and apicomedian margin of 5. Male genitalia similar to those of *T. flaviceps*, surstylus pointed at apex, less expanded ventrally (Fig. 92e). Two black apical teeth of 10th sternum plainly visible.

Lengths: body and wings each 6.3-6.5 mm.

♀. As ♂; terga 2-5 yellow on hind margins, 6th tergum all yellow. Base of ovipositor dark reddish brown, tinged black, apex of piercer as in Fig. 92c.

Lengths: body and wing each 6.5-6.75 mm.

Holotype ♂ (BPBM 13,369), allotype ♀ (BPBM), PAPUA NEW GUINEA: Gumi, nr Bulolo, 2010 m, 18.X.1979, on *Bambusa* leaf (H. Roberts). 11♂, 4♀ paratypes with following data: PAPUA NEW GUINEA: same as type; Morobe Prov, Mt Missim, 1600-2300 m, III-XII 1967, 1970, & 1978, some collected on vegetation in understory of primary forest (J.L. Gressitt, W.C. Gagné, J.H. Sedlacek); upper Watut, SW, 1100-1600 m, IV-V.1968 (Gressitt); Eastern Highlands, nr Okapa Wanitabe, South, 5000-6000 ft [1524-1829 m], 13.XI.1964 (R. Hornabrook); upper Manki logging area, nr Bulolo, 1500 m, 15.XII.1972 (F.R. Wylie & P. Shanahan); Koroda, 40 km W of Tari, 1750 m, 15.IX.1963 (R. Straatman). Paratypes in BPBM, AMS, FRSB, and UH.

Remarks. Dr H. Roberts, Department of Primary Industry, Forest Research Station, Bulolo says (in litt.) that this species completely replaces *T. flaviceps* above 1200 m and is found to at least 2200 m.

Etymology. The species epithet is from the Latin *alpinus*, "the high mountains."

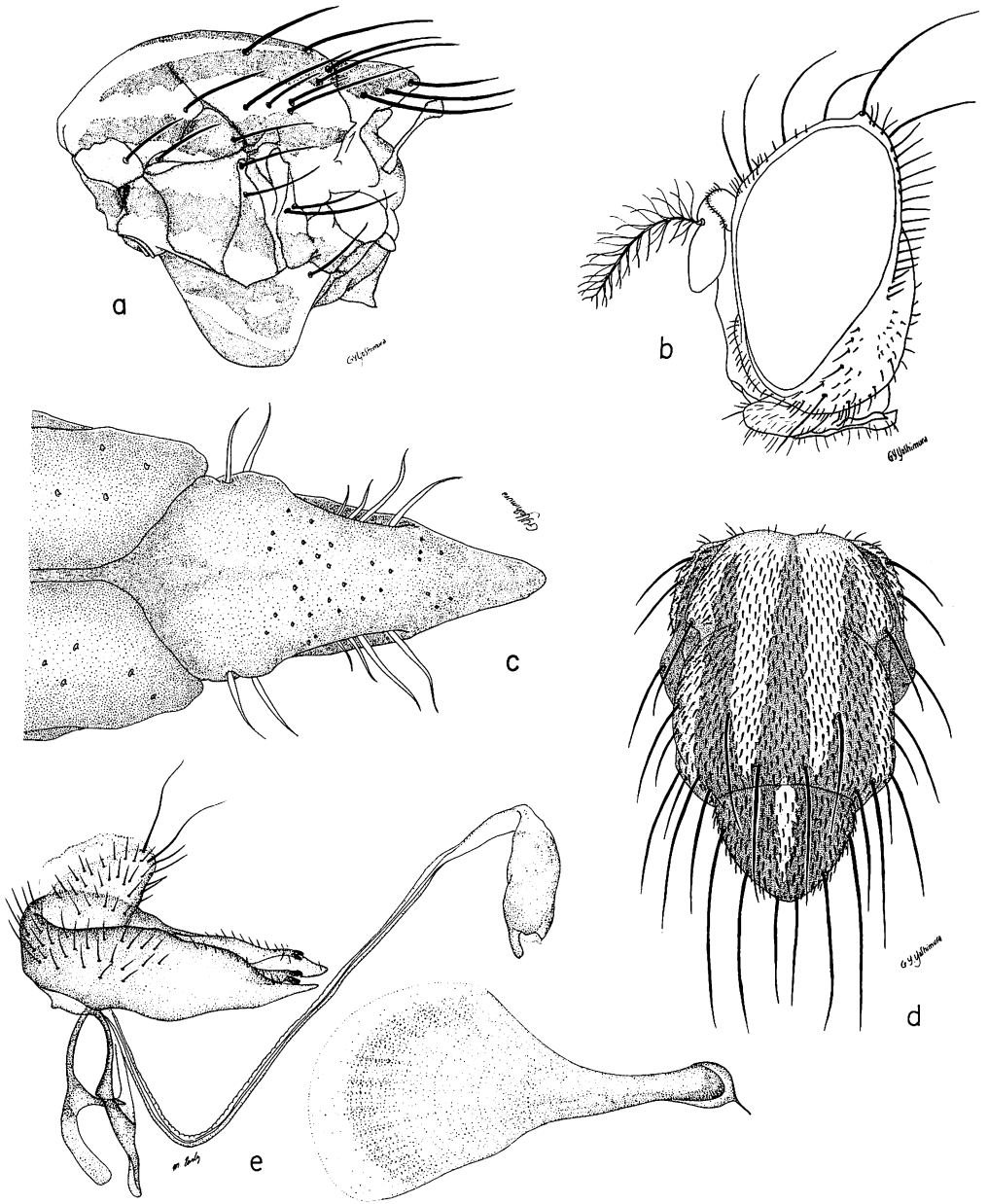


FIG. 92. *Themarohystrix alpina*: a, thorax, lateral view; b, head; c, ♀ apex of piercer; d, thorax, dorsal view; e, ♂ genitalia.

***Themarohystrix bivittata* Hardy, new species**

Fig. 93

Diagnosis. This species fits in the *T. suttoni* complex by having a black mark down the middle of the face; the mesopleural vitta ending at the spiracle; the sternopleural vitta continuous on the mesosternum; and the wing uniformly dark brown. It is differentiated by the entirely yellow mesonotum excepting a dark brown to black vitta on the lateral margin; the all yellow scutellum; a brown mark on the lower pteropleuron; and the wedge-shaped black mark down the middle of face that is broad at oral margin. It fits closest to *T. variabilis*, n. sp., but differs by having no black markings over the median portion of the mesonotum; a band of black over the dorsal margin of the sternopleuron, continuous on the mesosternum; the wedge-shaped mark on the face; and predominantly yellow legs.

♂. Black mark on face ending in sharp point at upper median portion below antenna, broadened apically, equal in width to clypeus at oral margin. Dorsal surface of clypeus dark brown to black. Sternopleuron usually with isolated dark brown to black spot near hind margin below sternopleural bristle. Postscutellum and metanotum yellow. First 3 abdominal terga yellow, tinge of brown on side of 2 and 3, 4 and 5 dull black, tinge of reddish brown in middle of 4. Otherwise fits characteristics of *T. suttoni* and other species of genus.

Lengths: body and wing each 6.0–6.5 mm.

♀. As ♂. Apex of ovipositor as in Fig. 93b; spermathecae as in Fig. 93a.

Holotype ♂ (BPBM 13,370), allotype ♀ (BPBM), IRIAN JAYA: Hollandia-binnen [Jayapura], 50 m, 17.VIII.1957 (D.E. Hardy). 3♂, 4♀, paratypes, 5, same data as type; 2, Waris, S of Hollandia, 29.VII.1959 & 1–7.VIII.1959 (T.C. Maa). Paratypes in BPBM and UH.

Etymology. The specific epithet combines the Latin words *bi*, "two," and *vitta*, "stripe," and refers to the 2 black vittae on the mesonotum.

***Themarohystrix flaviceps* Malloch**

Fig. 94

Themarohystrix flaviceps Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 422. Type-locality: Bulolo, New Guinea. Type ♀ in CIHS.

Diagnosis. This species fits in the same complex as *T. alpina* by having an entirely yellow face; 5 black longitudinal vittae on the mesonotum; 2 longitudinal black vittae

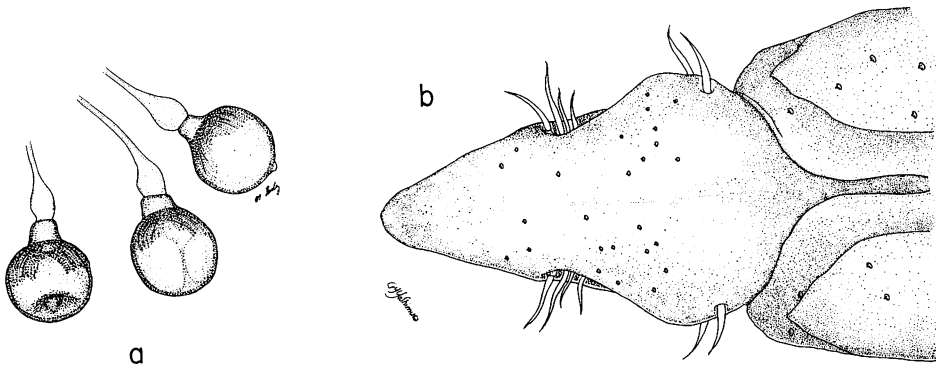


FIG. 93. *Themarohystrix bivittata*: a, ♀ spermathecae; b, ♀ apex of piercer.

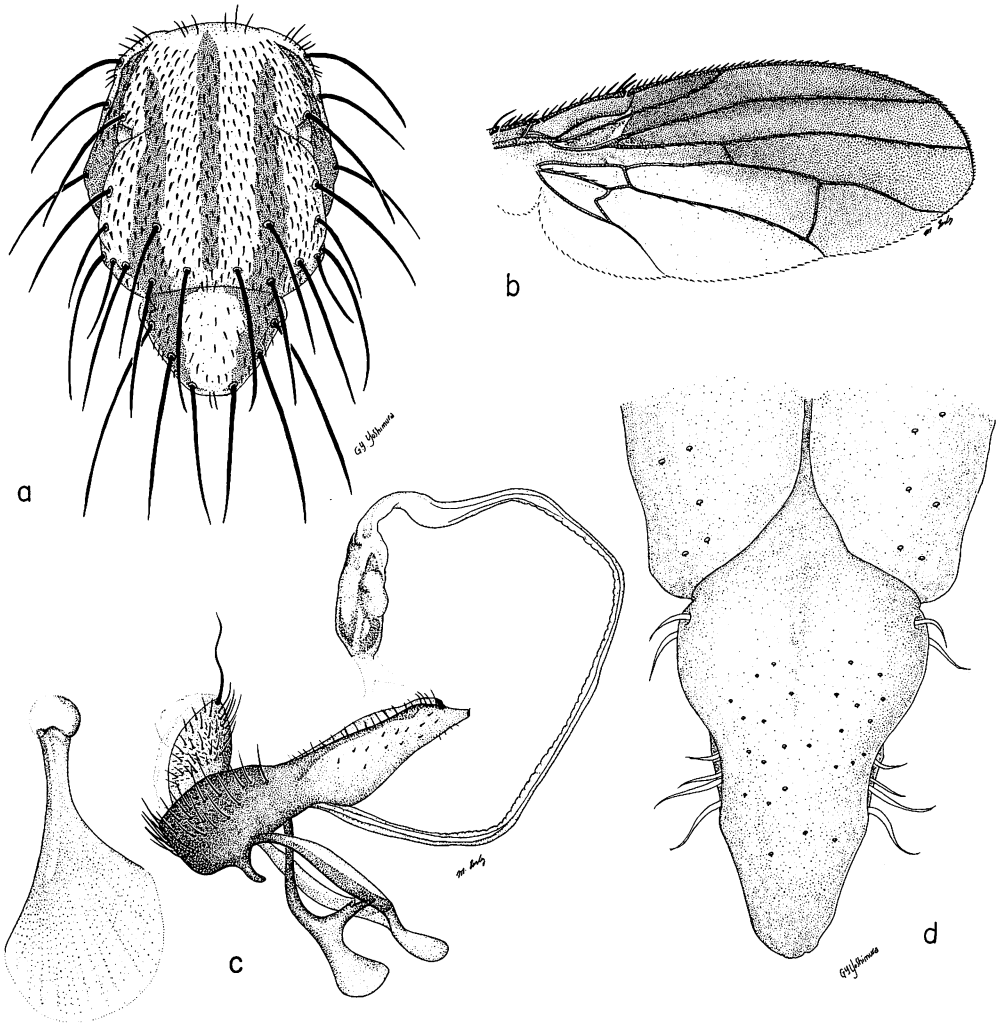


FIG. 94. *Themarohystrix flaviceps*: a, thorax, dorsal view; b, wing; c, ♂ genitalia; d, ♀ apex of ovipositor.

on the pleura; the mesopleural vitta continuous across the spiracle and the propleuron and the sternopleural vitta continuous across mesosternum; the prosternum all yellow; and a brown to black mark on lower pteropleuron. It differs from *alpina* by having the median vitta of the mesonotum isolated, not joined with submedian pair on the posterior margin; the scutellum yellow to rufous, except for the continuation of the submedian bands from the mesonotum; the sternopleuron yellow except for a comparatively narrow black band across the dorsal margin, without containing an isolated yellow spot and with ventral margin black; and the wings paler, subhyaline on posterior portion and lacking small subhyaline spots in middle.

Head entirely yellow except compound eyes, ocellar triangle, and black spot on gena below eye margin. Thorax pale yellow except shining black markings (Fig. 94a); postscutellum bordered with black on hind margin. Legs yellow, tinge of brown on basal portion of hind femur, front tibia black. Wing as in Fig. 94b, posterior portion broadly subhyaline. Abdomen largely black; terga 1-3 yellow, median spots black, side and apex of 4th tergum yellow, ♀ with apex of 5th and all of 6th tergum yellow. Seventh segment (ovipositor base) entirely subshining black, equal in length to terga 3-6. Apex of piercer as in Fig. 94d. Male genitalia as in Fig. 94c.

Lengths: body and wing each 6.0-7.0 mm.

Distribution. Papua New Guinea.

Specimens examined. Ca. 35 specimens from numerous localities throughout PAPUA NEW GUINEA below 1200 m.

***Themarohystrix helomyzoides* (Walker)**

Strumeta helomyzoides Walker, 1864, J. Proc. Linn. Soc. Lond., Zool. 7: 220. Type-locality: Mysol [Misol] Island, Maluku. Type ♂ in BMNH. One cotype in UQM collection.

Themarohystrix erinaceus Hendel, 1914, Wien. Entomol. Ztg. 33: 78; 1915, Ann. Hist. Nat. Mus. Natl. Hung. 13: 433. Type-locality: "Indian Archipelago." Type ♂ in DEI

Diagnosis. This species fits near *T. flaviceps* by having an all yellow face; the mesopleural vitta extending across the propleuron; the sternopleuron with a rather narrow black vitta along the dorsal margin, continuing across the mesosternum; and the wing subhyaline on the posterior portion. It differs from *flaviceps* by the mesonotum having only 4 vittae and lacking a median longitudinal vitta; the all yellow gena, which lacks a black spot below the eye margin; and by the postscutellum, which is entirely yellow and lacks a narrow black border.

Lengths: body and wing each 6.5-7.0 mm.

Distribution. Maluku and entire island of New Guinea.

Specimens examined. Both types and the cotype. PAPUA NEW GUINEA: 1♀, Torricelli Mts, Sugoitei Vill, 700 m, I.II.1959 (W.W. Brandt). IRIAN JAYA: 1♀, Genjem, 40 km W of Hollandia [Jayapura], 100-200 m, 1-10.III.1960 [no collector given].

***Themarohystrix hyalina* Hardy, new species**

Fig. 95

Diagnosis. This new species can be readily differentiated from all known species by the prominent hyaline markings through the basomedian portion of the wing (Fig. 95c); by the submedian longitudinal vittae of the mesonotum, which are interrupted at the suture and extend only onto the laterobasal portions of the scutellum; by the lateral vittae, which are broadly interrupted behind the humerus; by the largely black humerus with a broad continuous black mark on the side of the mesonotum (Fig. 95b); by the black marks on the meso-, ptero-, and sternopleura being joined; and by the predominantly black legs.

♂. *Head.* Shaped as in Fig. 95a, pale yellow except for black ocellar triangle, reddish brown compound eyes, and small spot of brown on gena at lower margin of eye. *Thorax.* Pale yellow, markings of mesonotum as noted above and as in Fig. 95b. Black marks on side of scutellum extended ventrally to lateral margins, connecting with black markings on side of metanotum and

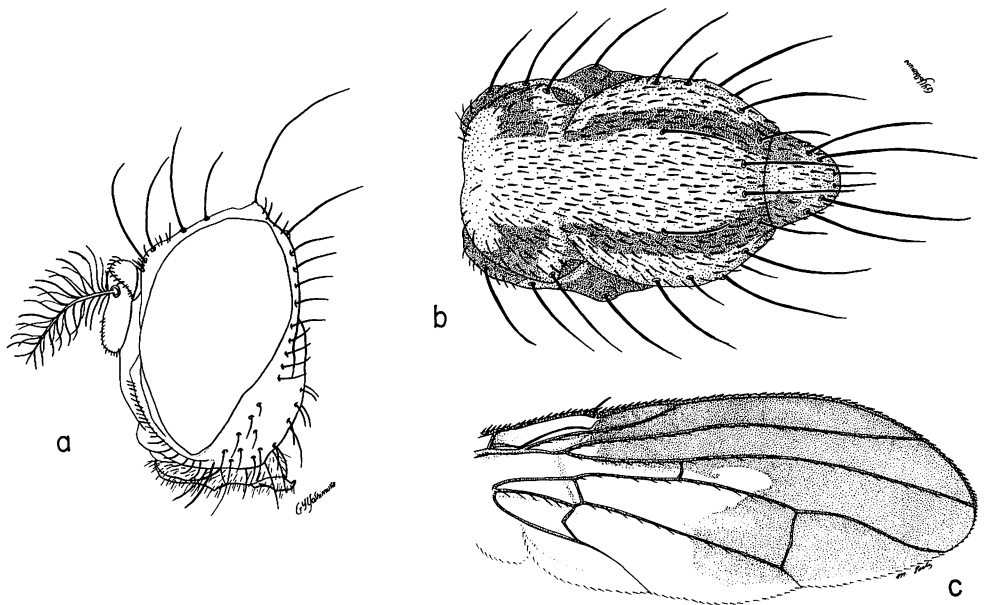


FIG. 95. *Themarohystrix hyalina*: a, head; b, thorax, dorsal view; c, wing.

posterior portion of pleurotergum. Pleura with black vitta from propleuron, across spiracle, through median portion of mesopleuron, across pteropleuron, to level with pteropleural bristle, continuous with black mark across dorsal margin of sternopleuron to venter across mesosternum. Remainder of pleura pale yellow. Dorsocentral bristles opposite supraalar. Apical scutellars small, cruciate, scarcely $1/3-1/4$ as long as secondary bristles (note: an aberration, a striking departure from other species of genus; species fits *Themarohystris* in all other characteristics). *Legs*. Mostly black, front femur yellow on apical $2/3$, mid and hind femora yellow on apical $1/3-1/4$. Bristling as in congeners. *Wing*. Costal margin broadly dark brown from level with apex of vein Sc to posterior portion in apex of cell M_4 , base of wing hyaline, hyaline extension through middle into cell R_5 just basad of m crossvein (Fig. 95c). Venation fits characteristics of congeners. *Abdomen*. First tergum largely black, yellow on lateral margin and along narrow apex. Second and 3rd terga yellow, brown spot on basomedian portion. Fourth and 5th terga dark reddish brown to blackish, narrowly yellow in apicomedian portion of 4th. Genitalia apparently as in other species of genus.

Lengths: body 6.3 mm; wing 6.0 mm.

♀. As ♂. Apices of terga 4 and 5 broadly yellow, 6 yellow except for brown lateral margin. Base of ovipositor dark brown to blackish, equal in length to terga 3-5. Piercer not extruded for study.

Lengths: body, excluding ovipositor, 7.0 mm; wing 6.75 mm.

Holotype ♂, PAPUA NEW GUINEA: Central Prov, Eilago, 3.V.1981, in rain forest (J.W. Ismay) (BPBM 13,371). *Allotype* ♀, PAPUA NEW GUINEA: Bisianumu, E of Port Moresby, 1500 m, 7.VI.1955, on *Crotalaria* leaf, in secondary growth forest (J.L. Gressitt) (BPBM). 1♂ paratype, PAPUA NEW GUINEA: Central Prov, nr Eilago, 21.XII.1982, in rainforest (Ismay) (DPIK).

Etymology. The specific epithet is from the Greek *hyalinus*, "glassy, transparent," and refers to the hyaline marks in the wings.

***Themarohystrix nigrifacies* Hardy, new species**

Diagnosis. This species fits in a complex with *T. perkinsi*, n. sp., characterized by having the mesopleural vitta extending across the propleuron; all yellow scutellum, postscutellum and metanotum; a brown to black spot below the eye margin on the gena; and uniformly dark brown wings. It differs from *perkinsi* by having the lower 1/2 of the face and gena entirely black and the raised median portion of the face dark brown to black almost to the bases of the antennae.

♂. Clypeus black dorsally, reddish brown on side. Pair of submedian, brown to black, longitudinal vittae on mesonotum at level of intrapostalar bristles, evanescent just beyond suture. This coloration apparently variable. Paratype has no submedian vittae; it may be general. Small spot of brown on basal margin on pteropleuron. Sternopleuron black except narrow yellow posterior and ventral margin. Black coloration extending across mesosternum. Paratype with ventral position of sternopleuron largely yellow to rufous, black confined to dorsal 1/2-3/5 and posterior margin. Legs largely yellow, front tibia mostly brown, basal 1/2 of mid and hind femora brown to blackish. First 2 terga yellow to rufous, brown on narrow lateral margin, remainder of abdomen black, lightly gray pollinose. Wing as in most species of genus, posterior portion slightly paler.

Lengths: body and wing each 6.0-6.5 mm.

♀. Unknown.

Holotype ♂ (BPBM 13, 372), 1♂ paratype (UH), IRIAN JAYA: Genjem, 40 km W of Hollandia (Jayapura), 100-200 m, 1-10.III.1960 [no collector given].

Etymology. The specific epithet combines the Latin *nigra*, "black," with *facies* to refer to the black face.

***Themarohystrix perkinsi* Hardy, new species**

Fig. 96

Diagnosis. This species fits near *T. nigrifacies*, possesses the same characteristics and fits the description of *nigrifacies* species except the face is predominantly yellow with a narrow brown to black vitta down each parafacial line and a narrow black border on the oral margin.

Clypeus predominantly black, rufous tinged with brown on extreme lateral margins; mesonotum of ♂ entirely rufous except for black lateral margins and 3rd tergum yellow except for brown on lateral margins. Apex of ♀ ovipositor as in Fig. 96.

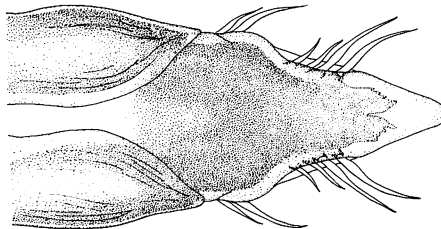


FIG. 96. *Themarohystrix perkinsi*, ♀ apex of piercer.

Holotype ♂ (BPBM 13,373), allotype ♀ (BPBM), IRIAN JAYA: Genjem, 40 km W of Hollandia, 100–200 m, 1–10.III.1960 [no collector given]. Paratypes: IRIAN JAYA: 1♀, Maffin Bay, 9.X.1944 (E.S. Ross); 1♂, Cyclops Mts, Sabron, 4000 ft [1219 m], VI.1936 (L.E. Cheesman). Paratypes in BMNH and UH.

Etymology. The species is named after the late Dr F.A. Perkins, University of Queensland, Australia. The specimen from the Cyclops Mts in BMNH had been designated by Perkins as the type of a new species but the description was never published.

Themarohystrix suttoni Malloch

Fig. 97

Themarohystrix suttoni Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 423. Type-locality: Wewak, New Guinea. Type ♂ in CIHS.

Diagnosis. This species fits in a species complex characterized by the presence of a black mark down the middle of the face; the mesopleural vitta ending at the spiracle; and all dark brown wings. It differs from other species of this complex by having 5 prominent black vittae on the mesonotum, the submedian pair continuing onto the side of the scutellum; a black vitta along the dorsal margin of the sternopleuron, continuous across mesosternum; the facial mark linear, not noticeably expanded above the oral margin; and a brown to black spot on the pteropleuron.

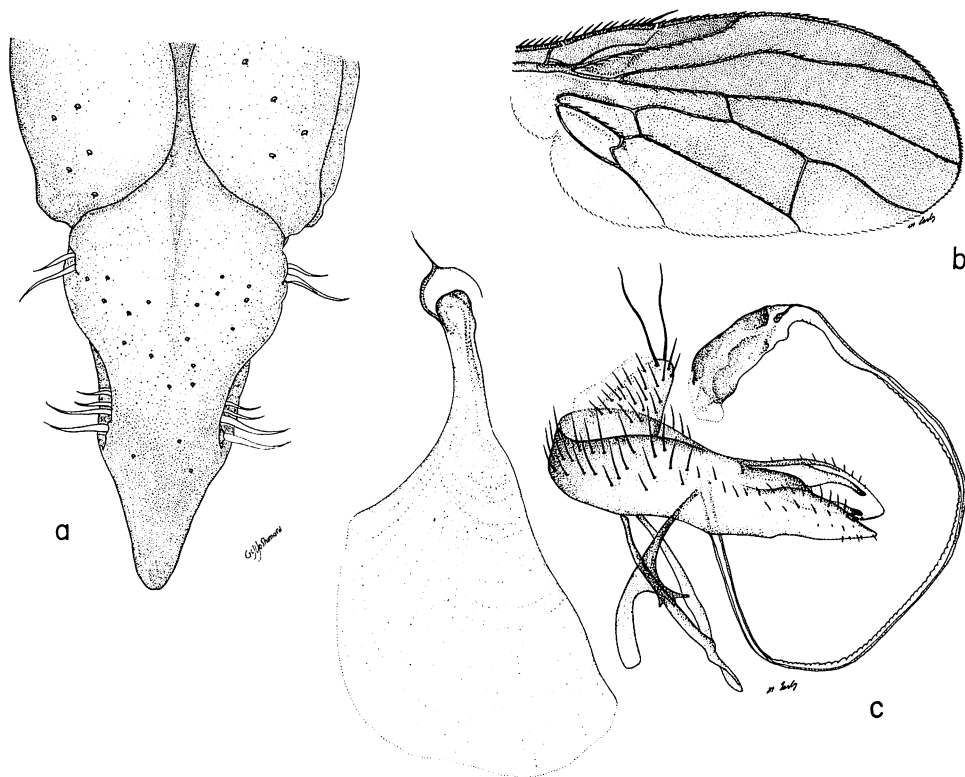


FIG. 97. *Themarohystrix suttoni*: a, ♀ apex of piercer; b, wing; c, ♂ genitalia.

Fits description of *T. flaviceps* and most other species of genus, except vittae consistently narrower, width equal to ca. 4 rows of mesonotal setae. Postscutellum and metanotum entirely yellow. Front tibia and mid and hind femora predominantly reddish brown, tinged blackish, femora broadly yellow to rufous on apices. First 2 terga of ♂ abdomen yellow to rufous, 3rd mostly rufous, brown to black medially, 4th tergum largely brown, yellow at apex. Female abdomen yellow on basal 3 terga except narrow brown vitta down middle, otherwise dark reddish brown to blackish. Base of ovipositor entirely dark reddish brown to black, equal in length to terga 3-6. Apex of ♀ piercer as in Fig. 97a. Male genitalia as in Fig. 97c. Wing as in Fig. 97b, uniformly dark brown.

Distribution. Widespread throughout the island of New Guinea.

Specimens examined. Ca. 25 specimens with following data. PAPUA NEW GUINEA: Mt Lamington, 1200-1500 ft [365-474 m], [no date] (C.T. McNamara); Baiyik, 18-21.XII.1963 (K.K. McAlpine); Maprik, Sepik area, 160 m, 28.VIII.1957 (D.E. Hardy); Baiyer Riv, 1000 m, 1-4.IX.1969 (Y. Hirashima); Amok, 165 m, 6.I.1960 (T.C. Maa); Angoram, 10 m, 15.VIII.1969, on palms (J.L. Gressitt). IRIAN JAYA: Genjem, 40 km W of Hollandia, 100-200 m, 1-10.III.1960 (Maa); Waris, S of Hollandia, 450-500 m, 27-30.VII.1959 (Maa).

Themarohystrix variabilis Hardy, new species

Fig. 98

Diagnosis. This species fits in the *suttoni* species complex by having a black vitta down the middle of the face and by having the mesopleural vitta abbreviated, not extending onto the propleuron. It differs from other members of the complex by having the sternopleuron and mesosternum entirely yellow. It fits nearest to *T. suttoni* but usually has only 1 black vitta down the middle of the mesonotum and has an all yellow scutellum.

Head. Narrow black vitta on face straight-sided, as in *T. suttoni*, a narrow black spot in middle of clypeus. *Thorax.* Postscutellum, metanotum, and pleura yellow to rufous, black longitudinal vitta through middle of mesopleuron. Usually faint indication of submedian vittae represented by thin brownish stripes in line with dorsocentral bristles. Scutellum usually all yellow. *Legs.* Front tibia mostly black, tinged yellow to rufous at base. Mid and hind tibiae yellow to rufous in ground color, tinged brown to black, mid and hind femora mostly black, yellow on apices. *Wing.* Very dark brown, almost blackish. *Abdomen.* First 3 terga of ♂ yellow except black margins on 3rd; 4th and 5th terga black, tinge of yellow on posteromedian margin

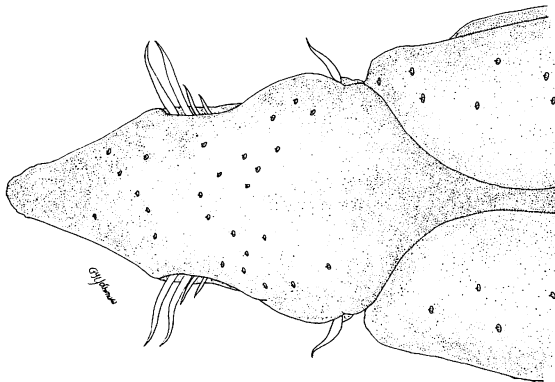


FIG. 98. *Themarohystrix variabilis*, ♀ apex of piercer.

of 4th. Female with 1st 3 terga similar to that of ♂, 4th broadly yellow on posteromedian portion, 5th narrowly yellow at apicomedian margin. Sixth tergum entirely black. Basal segment of ovipositor slightly shorter than in other species of genus, ca. 1/3 longer than wide, equal in length to terga 3-5. Apex of piercer as in Fig. 98.

Lengths: body and wing each 6.0-7.0 mm.

Holotype ♂ (BPBM 13,374), allotype ♀ (BPBM), 4♂ paratypes, PAPUA NEW GUINEA: Central Prov, Moreguina, 24.VII.1981, on vegetation at river margin (J.W. Ismay). 18♂, 12♀ paratypes with following data. PAPUA NEW GUINEA: Northern Prov, Popondetta, Pati, 15.V.1967 (B. Keoro); Milne Bay, 10 m, III.1965 (J. Sedlacek); Daradae, nr Javarere, Musgrove Riv, 100 m, 2.X.1958 (J.L. Gressitt); Finschafen, IV.1944 (F.E. Skinner); Tapini, 1100 m, 17.V.1961 (J.L. & M. Gressitt); Finschafen, IV.1944 (Skinner); Aiyura, nr Kainantu, 1600-1800 m, 9.I.1965, on grass (Gressitt); 6 mi (9.6 km) NW of Lae, 15 m, 5.VII.1957, in rain forest (D.E. Hardy); Goroka, 1650 m, 14.V.1966 (Gressitt); Markham Riv Val, Nadzab, 11.VI.1944 (K.V. Krombein); Morobe Prov, native garden, 15.IV.1957 (J.H. Ardley); Lae, Singuawa Riv, 147°10'E, 6°45S, 30 m, 16.IV.1966, malaise trap in Kunai grass (O.R. Wilkes); Bulolo, Bulolo Crk, 16.VI.1983, lowland rain forest (J. Roberts); Western Highlands, Korn Farm, 1560 m, 19.X.1958 (Gressitt); Bena Riv, 1500-1600 m, 2-3.X.1964 (M. Sedlacek); Morobe Prov, Wau, 1200 m, 14-28.IV.1961 & 1972 (Gressitt & B.S. Cheary); Kassam, 48 km E of Kainantu, 1350 m, 7.XI.1959 (T.C. Maa). IRIAN JAYA: W of Manokwari, Kebar Val, Vogelkop, 550 m, 4-31.I.1962 (L.W. Quate); Vogelkop, trail from Sucumi to Ransiki, 300 m, 7.VIII.1957 (Hardy). Series of paratypes in BPBM, others in AMS, DPIK, USNM, and UH.

Remarks. In a few specimens the submedian vittae are rather well developed, distinct dark brown to blackish, and continuous as a thin brown line on the side of the scutellum; in a few specimens the submedian vittae are scarcely discernible or entirely lacking.

Etymology. The specific epithet is from the Latin *variabilis*, "changeable"; it refers to the variability of the markings on the mesonotum.

Genus *Themaroides* Hendel

Themaroides Hendel, 1914, Wien. Entomol. Ztg. 33: 77. Type-species: *Helomyza quadrifera* Walker, 1861, by original designation.

Rioxina Hering, 1941, Siruna Seva 3: 16. Type-species: *Rioxina debeauforti* de Meijere, 1906 [= *Seraca abbreviata* Walker, 1865], by original designation. New synonymy.

Hering (1941c) allied *Rioxina* to *Rioxina* and differentiated it by the arista with long dorsal and ventral rays. The 2 genera actually belong in different groups. *Rioxina* has only 1 strong spur at the apex of the mid tibia, the scutellum bare. Hering (op. cit.) said it is closely related to *Themaroides* and differs by having the lower superior fronto-orbital bristle in middle of the front and the costal spine rudimentary. The position of the lower superior fronto-orbitals is variable in species of *Themaroides*. The type-species of Hering's taxon has a moderately large costal spine, about equal in length to the upcurved portion of vein Sc.

The genus fits in the group of genera characterized by having only vein R₁ and R₄₊₅ setose; 2 strong spurs at the apex of the middle tibia; 6 strong marginal bristles on the scutellum and the scutellum setose; intrapostalar bristles present; the ocellar bristle rudimentary, setalike; and the arista long plumose with a row of rather long curved

hairs on the inner margin. It fits closest to *Kertesziola* but differs by having the superior fronto-orbital bristles widely spaced, lower situated below middle of front, sometimes nearly opposite upper inferior fronto-orbitals (Fig. 99b); the mesonotum with an extra supraalar bristle opposite the dorsocentrals; the scutellum densely setose over the disc; the costal spines large, greater in thickness and equal in length to the outer vertical bristles; and the wings predominantly brown (Fig. 99e) or with a quadrate mark in cell R_1 and no hyaline marks in R_5 (Fig. 100f). Most species have 2 pairs of inferior fronto-orbitals; *T. robertsi*, n. sp., and *T. xanthosoma*, n. sp., each have only 1. *Themaroides* resembles *Themarohystrix* but differs by having veins M_{3+4} and Cu bare, not setose above and front with only 1 pair of inferior fronto-orbital bristles reclinate.

Based upon wing markings alone, *Themaroides* and *Rioxina* would appear to be distinct genera. Considering their face shapes, the type-species of each genus, *quadri-fera* [face almost vertical (Fig. 100c)] and *abbreviata* [face gibbose (Fig. 99b)], would seem to represent distinct genera. In other characters, however, the taxa seem to be congeneric. I prefer to treat differences in wing markings as specific characters in this case. The species studied show intergradation in face shape, which also appears to be of only specific importance in this genus.

Five species are known; all are from New Guinea and Maluku.

KEY TO KNOWN SPECIES OF *THEMAROIDES*

1. Wing entirely brown except posterobasal portion 2
With large quadrate mark in middle of anterior margin of wing (Fig. 100f) **quadri-fera**
2. Mesonotum without complete median black vitta, no black mark on middle of scutel-
lum; face yellow, gently convex or nearly vertical 3
Mesonotum with median longitudinal black vitta extending onto middle of scutel-
lum; face strongly convex, black median vitta on lower 1/2 (Fig. 99b)
..... **abbreviata**, n. comb.
3. Thorax with longitudinal brown to black vittae on pleura 4
Thorax entirely yellow to rufous, tiny black spot behind wing base (hidden except
when wing expanded) **xanthosoma**, n. sp.
4. Mesonotum and scutellum yellow, small streak of brown above humerus; black vitta
from lower 2/5 of humerus along top margin of mesopleuron to wing base, top
margin of sternopleuron extensively black; 1 inferior fronto-orbital bristle
..... **robertsi**, n. sp.
Mesonotum with 5 narrow pale brown postsutural vittae, dark brown to black vitta
on side from above humerus to wing base; pleura with brown vitta on mesopleuron
forking before spiracle, top arm extending over lower margin of humerus, lower arm
to lower part of propleuron; 2 strong inferior fronto-orbitals **vittata**, n. sp.

Themaroides abbreviata (Walker), new combination

Fig. 99

Seraca abbreviata Walker, 1865, J. Proc. Linn. Soc. Lond., Zool. 8: 117. Type-locality: "New Guinea." Type ♀ in BMNH.

Rioxa debeauforti de Meijere, 1906, Nova Guinea 5: 94. Type-locality: Manikion, Irian Jaya. Type ♂ in ZMUA.

Diagnosis. This species can be readily differentiated from other known species by the complete longitudinal black vitta extending down the middle of the mesonotum and

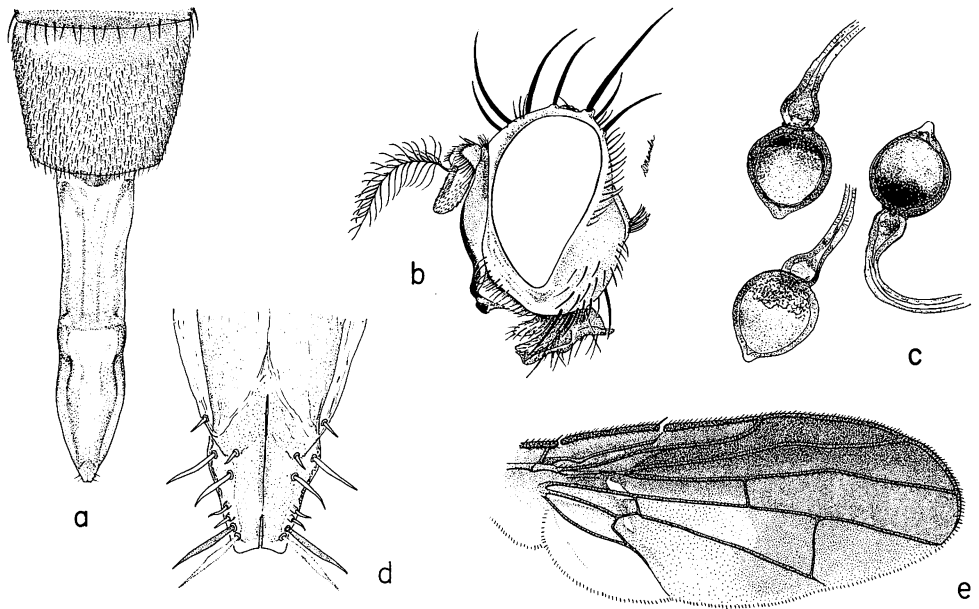


FIG. 99. *Themaroides abbreviata*: a, ♀ ovipositor; b, head; c, ♀ spermathecae; d, ♀ apex of piercer; e, wing.

over the middle of the scutellum and by the strongly gibbous face (Fig. 99b) with a black median vitta on its lower 1/2.

Head higher than long, front gently sloping, face convex on upper 3/4, flattened on lower margin. Eyes higher than long, distinctly narrowed ventrally, almost to point (Fig. 99b). Superior fronto-orbital bristles on upper 1/2 of front, inferior fronto-orbitals close together on lower margin. Upper inferiors strong, cruciate, recumbent. Black mark in middle of lower 1/2 of face triangular, extending across middle of clypeus. Antenna short, scarcely 1/3 length of face. Arista densely long plumose, long hairs along inner margin. Thorax bright yellow, a median black vitta from behind scapular bristles to hind margin between prescutellar bristles and across middle of scutellum between apical scutellars. Six strong scutellars, no developed secondary bristles. Extra supraalar bristle small compared to other species, ca. 1/2 as long as anterior bristle. Black vitta down side of mesonotum from above humerus, covering notopleuron, extending to wing base. Black longitudinal vitta from propleuron across middle of meso-, ptero-, and upper edge of hypopleura, black mark present near upper margin of sternopleuron before bristle. Wing dark brown except subhyaline posterobasal portion. Third costal section ca. 3/4 as long as 2nd. Vein R_{2+3} gently undulate. Crossvein r-m near apical 2/3 of cell 1st M_2 , lobe of cubital cell short, ca. 1/5 as long as vein Cu_{1+1stA} (Fig. 99e). Basal 3 abdominal terga yellow, brown on lateral margin. Terga 4-5 in ♂, 4-7 in ♀ dark brown to black, tinge of rufous in ground color of 4th. Surstylus of ♂ broad and blunt. Cercus small, length much shorter than epandrium. Lobe of 10th sternum short, thick, ca. as long as wide, ca. equal in length to terga 5-6. Piercer short, thick, slightly > 2× longer than wide (Fig. 99a), rather truncate at apex, preapical setae as in Fig. 99d. Three oblong spermathecae with apical nipples and bulbous necks (Fig. 99c).

Lengths: body 8.75 mm; wing 9.5 mm.

Distribution. Widespread on island of New Guinea.

Specimens examined. Types of both taxa. Ca. 40 specimens with the following data. IRIAN JAYA: Sewan, Res Farm, 12.III.1958 (R.T. Simon Thomas); Waris, S of Hollandia, 450–500 m, 1–7.VIII.1959 (T.C. Maa); Fak-Fak [no date] (A.E. Pratt); Kebar Val, W of Manokwari, 50 m, 4–31.I.1962 (L.W. Quate); Vogelkop, Bomberi, 700–900 m, 10.VI.1959 (Maa). PAPUA NEW GUINEA: Finisterre Range, Saidor, Aiyawa Vill, 16–23.VI.1958 (W.W. Brandt); Madang, Sapi Riv Plant, 11–15.VII.1983, unlogged forest (H. Roberts); E Sepik Prov, Dreikirik, 350 m, 22.VI.1961 (J.L. & M. Gressitt); Lae, Bubia, in rainforest, 6–7.VIII–15.XI.1957, on wild ginger and in native gardens (J.H. Ardley); Imbria, Maprik, 19.XII.1963 (D.K. McAlpine); Murua Riv, 2–10 m, 21.XII.1964 (Gressitt & Gressitt).

Themaroides quadrifera (Walker)

Fig. 100

Helomyza quadrifera Walker, 1861, J. Proc. Linn. Soc. Lond., Zool. 5: 246. Type-locality: Dorey, New Guinea. Type ♀ in BMNH.

Helomyza optatura Walker, 1865, J. Proc. Linn. Soc. Lond., Zool. 8: 116. Type-locality: New Guinea. Type ♂ in BMNH.

Themara ampla: Doleschall, 1859, Natuurhist. Tijdsch. Ned. Indie 17: 154 (not Walker, 1857).

Diagnosis. *Themaroides quadrifera* has previously been known only from the type. Malloch (1939a) keyed it as having vein R_{2+3} conspicuously undulate and indicated that the face is strongly convex in profile. Neither of these characters is correct. Vein R_{2+3} is straight or nearly so and the face is almost vertical, only slightly convex in profile (Fig. 100c). It is readily recognized by the generic characters given above in combination with the presence of a large quadrate hyaline mark in the middle of the anterior margin of the wing (Fig. 100f).

Entirely yellow to rufous except brown to black 4th tergum of abdomen, tergum 5 black except tinge of yellow down middle and sometimes complete yellow vitta. Terga 6 and 7 of ♀ black. Head shape and bristle arrangement as in Fig. 100c, lower superior fronto-orbital bristles on lower portion of front almost opposite upper inferior fronto-orbitals, 2 inferiors approximate on lower margin. Face slightly raised medially, almost vertical in profile. Thorax and abdomen densely black setose including scutellum, meso- and sternopleura; only pro-, meta- and hypopleura bare. Dorsocentral bristles halfway between anterior supraalar and postalar bristles, strong secondary supraalar opposite dorsocentrals. Intrapostalar bristles well developed, in front of basal scutellars, 3/4 size of postalars. Scutellar bristles all of equal size. Front femur with row of moderately strong posteroventral bristles on apical 1/3, spurs of mid tibia of equal size, nearly 1/2 as long as basitarsus. Wing as in Fig. 100f, 3rd costal section slightly > 1/2 as long as 2nd, r-m crossvein at apical 3/4 of cell 1st M_2 . Abdomen coloration as noted above and as in Fig. 100b. Male cercus short, thickly haired. Surstylus short, thick, truncate apically (Fig. 100d). Tenth sternum with 1 strong black apical tooth. Female ovipositor base short, almost as wide as long, ca. equal in length to terga 5–6. Piercer equal in length to 8th segment, subacute, evenly tapered to apex, 4 long, preapical setae on side, number of prominent setae along side on apical 3/4 (Fig. 100a). Three round, heavily sclerotized spermathecae, necks thick, extruded (Fig. 100e).

Lengths: body 8.5–9.5 mm; wing 9.5–10.5 mm.

Distribution. New Guinea and Maluku.

Specimens examined. Types of both taxa. Ca. 40 specimens of both sexes with following data. MALUKU: AMBON: 0–150 m, 2–6.XII.1973 (R. Kano); same data, IX.1963 (A.M.R. Wegner). PAPUA NEW GUINEA: Western Prov, Morehead, 25.VIII.1970 (T.L. Fenner); lower Sepik Riv, X.1959 (R. Pullen); Morobe Prov, Wau, 1200 m, 10.X.1978, Leking on undersides of *Piper* sp. leaves (W.C. Gagné); upper Manki logging area,

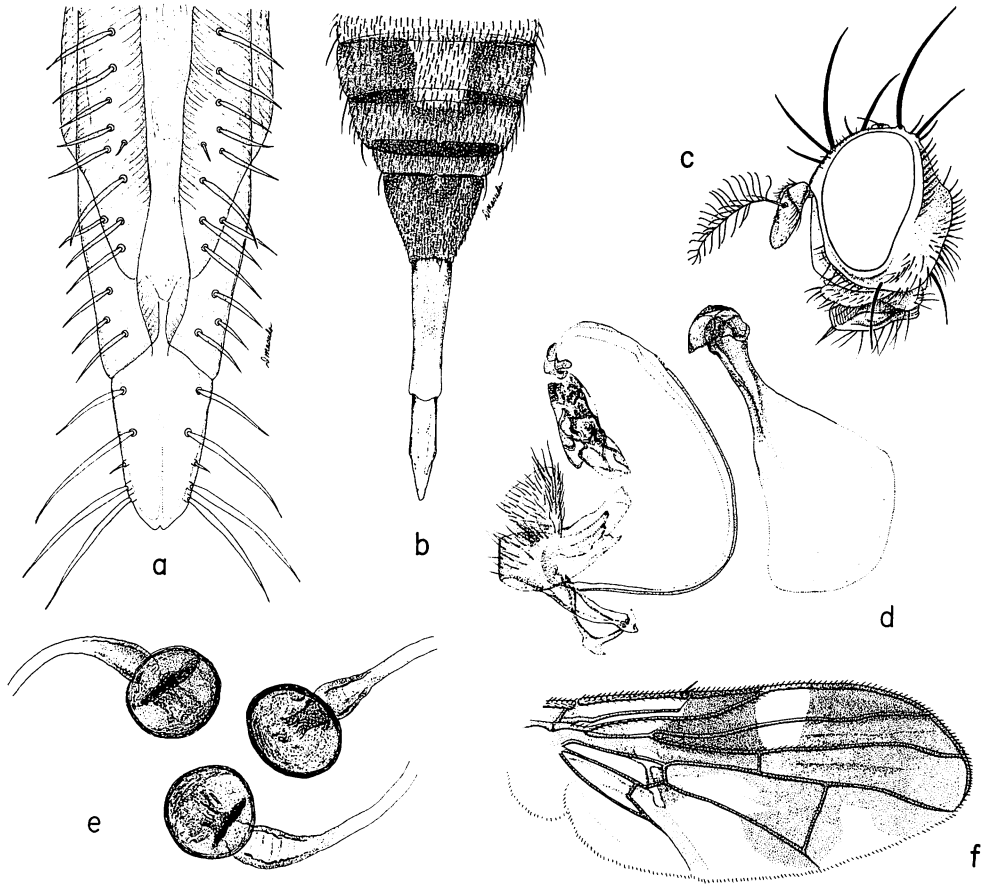


FIG. 100. *Themaroides quadrifera*: a, ♀ apex of piercer; b, ♀ abdomen; c, head; d, ♂ genitalia; e, ♀ spermathecae; f, wing.

nr Bulolo, 2.II.1973 (F.R. Wylie & P. Shanahan); Wau, Kunai Crk, 30.VI.1957 & 20.II.1958, in native gardens (J.H. Ardley); Nadzab, 9.XI.1944 (D.G. Hall); Wau Val, Kunai Crk Pltn, 4000 ft [1220 m], [no date given] on coffee bushes (E. Kanjii); Lomari, nr Brown Riv, 12.II.1982 (J.W. Ismay); Central Prov, Laloki, 17.IX.1974 (D.P.A. Sands); Owen Stanley Range, Goilala, Loloipa, 11-20.XII.1957 (W.W. Brandt); Western Prov, Waidoro, 7.III.1972 (Ismay). IRIAN JAYA: Vogelkop, Bomberi, 700-900 m, 7.VI.1959 (T.C. Maa); Vogelkop, Kebar Val, W of Manokwari, 550 m, 4-31.I.1962 (S. & L. Quate).

Themaroides robertsi Hardy, new species

Fig. 101

Diagnosis. This species fits near *T. vittata*, n. sp., by having predominantly dark brown wings and a longitudinal black vitta on the pleura of the thorax. It differs by having the mesonotum and scutellum yellow except for a small streak of brown above the humerus; a black vitta extending from the lower 2/5 of the humerus, along the top margin of the mesopleuron, to the wing base; the top margin of the sternopleuron extensively black; only 1 inferior fronto-orbital bristle; and the occiput bare except on margins.

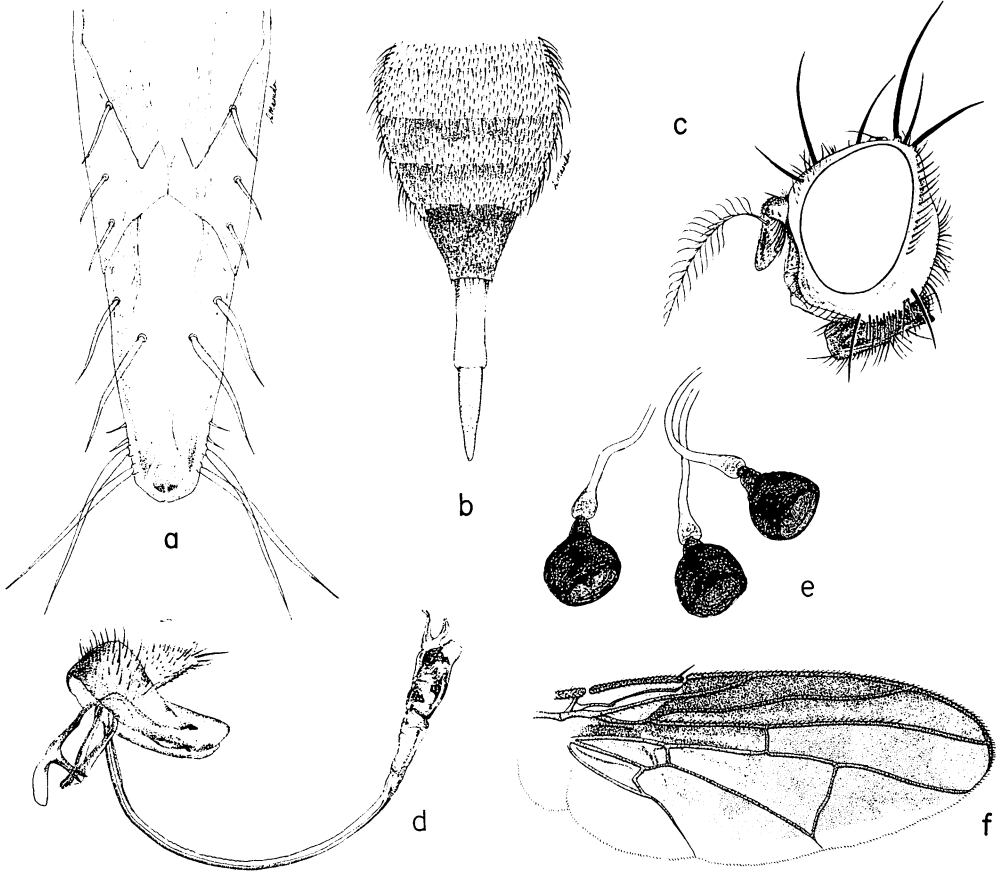


FIG. 101. *Themaroides robertsi*: a, ♀ apex of piercer; b, ♀ abdomen; c, head; d, ♂ genitalia; e, ♀ spermathecae; f, wing.

♂. *Head*. Mostly yellow with tinge of brown across upper median portion of face, 3rd antennal segment tinged brown at apex, apical 2/3 of palpus black. Superior fronto-orbitals widely spaced, lower near lower 3/5 of front. Pair of strong cruciate inferior fronto-orbitals. A few specimens have weak secondary inferior fronto-orbitals, in 1 specimen a secondary on one side, absent on other. Ocellars ca. equal in size to setae posterior to inner vertical bristles. Face gently convex in profile (Fig. 101c), upper median portion narrowed into thin carina between antennae. Occiput and gena bare except occipital row and bristly setae along posterior and lower margins. Genal bristle flat, almost straplike. Row of rather weak vibrissae present. Antenna fitting characteristics of congeners. *Thorax*. Mostly rufous, densely black setose on mesonotum, scutellum, and most of pleura, especially on lower portion of sternopleuron. Bristles as typical for genus, 2 pairs of secondary scutellars, ca. 2× longer than scutellar setae. Markings as noted above. *Legs*. Mostly yellow, tinged brown on basal 1/2 of mid and hind femora. No anteroventral bristles on hind tibia. *Wing*. Mostly dark brown, hyaline along posterior border and in anal area. Third costal section ca. 2/3 as long as 2nd. Costal spine large, longer than upcurved section of vein Sc. Vein R_{2+3} almost straight, lobe of cell Cu short, ca. 1/5 as long as Cu_{1+1stA} (Fig. 101f). *Abdomen*. Basal 3 terga yellow except for brown side of 3rd. Tergum 4 broadly black on side with yellow on

median portion; 5 predominantly black, tinged rufous on median portion. Male genitalia as in Fig. 101d, surstylus broadly rounded at apex, 10th sternum with 2 blunt teeth.

Lengths: body 9.0–9.3 mm; wing 10.5–10.75 mm.

♀. As ♂ except palpus consistently all yellow. Basal 3 abdominal terga pale yellow except brown on side of 3rd. Fourth and 5th terga brown on side and across basal margin, yellow on posteromedian portion; tergum 6 entirely yellow. Basal segment of ovipositor dark reddish brown to black, short, thick, scarcely longer than wide, ca. equal in length to terga 4–5 (Fig. 101b). Piercer ca. equal in length to 8th segment, gradually tapered to blunt apex, several prominent preapical setae as in Fig. 101a. Three round to mushroom-shaped spermathecae, necks extruded (Fig. 101e).

Holotype ♂ (BPBM 13,375), allotype ♀ (BPBM), PAPUA NEW GUINEA: upper Stony logging area, nr Bulolo, 25.VII.1979, under *Musa* leaf (H. Roberts). 8♂, 11♀ paratypes, with following data: PAPUA NEW GUINEA: same data as holotype; Gumi, nr Bulolo, 5000 ft [1524 m], 8.XII.1972–9.III.1973 (F.R. Wylie & P. Shanahan); upper Watut, SW, 1500–1800 m, 3.V.1968 (J.L. Gressitt); Eastern Highlands, 20 km SW of Kainantu, 1600 m, 16.I.1966 (J. Sedlacek); Koroba, 40 km W of Tari, 1750 m, 15.IX.1963 (R. Straatman). Paratypes in BPBM, AMS, FRSB, and UH.

Remarks. The color of the palpus is seemingly variable: type and 2♂ paratypes have black palpi, 6♂ paratypes have yellow palpi. One specimen has an entirely black sternopleuron, in some specimens black coloring extends over part of front margin.

Etymology. The species is named after Dr Hywel Roberts, Department of Primary Industry, Forest Research Station, Bulolo, Papua New Guinea. His help in collecting specimens and gathering field data in the Bulolo area has been of tremendous value to this study.

***Themaroides vittata* Hardy, new species**

Fig. 102

Diagnosis. This species fits in a complex characterized by predominantly brown wings, the face only slightly convex in profile, and the presence of 2 pairs of extra, small, scutellar bristles. It differs from all known *Themaroides* by having 5 narrow, brown, postsutural vittae on the mesonotum in the area bounded by the intrapostalar bristles; the scutellum bare of setae in the middle, densely setose on sides, with a brown vitta on each side just above the bristle row; and distinctive markings on the pleura, as noted in the key above and as in the description below.

♂. *Head.* Shaped as in Fig. 102d. Yellow except for eyes and ocellar triangle. Eyes almost round, front moderately sloping, antenna slightly above middle of head. Antennal furrow rather shallow, face gently raised in upper median portion, forming short keel between bases of antennae, flattened on lower 1/2 above oral margin. Lower superior fronto-orbital bristles distinctly below middle of front, both pairs of inferior fronto-orbitals strong, cruciate. Ocellar bristles ca. equal or slightly larger than black setae posterior to inner vertical bristles. Lower portion of occiput densely covered with strong, erect black rather bristlelike setae. Palpus with numerous strong black setae, especially along ventral margin. *Thorax.* Mostly yellow, 5 postsutural vittae as noted above and as in Fig. 102b. Dark brown to blackish vitta on lateral margin from above humerus to wing base. Brown longitudinal vitta from metathoracic spiracle across middle of ptero- and mesopleura, forking near front margin around mesothoracic spiracle, top arm extending onto lower margin of humerus, lower arm extending across lower portion of propleuron to bottom of cervical sclerite. Band of brown across upper margin of sternopleuron. Ventral portion

of sternopleuron densely black setose. Posterior supraalar bristle opposite dorsocentrals, equal in size to anterior bristle. Scutellum with 10 pairs of bristles, similar in some respects to *Xarnuta* Walker, 2 intermediate pairs small, ca. 1/3 as long as regular bristles. *Legs*. Entirely yellow, fitting characters of congeners. Hind tibia with 2 anteroventral and ca. 10 anterodorsal bristles at middle. *Wing*. Similar to those of other species in complex (Fig. 102d). Costal spine longer than upcurved portion of vein Sc, 3rd costal section slightly $> 1/2$ as long as 2nd. Vein R_{2+3} almost straight. *Abdomen*. Mostly yellow, brown on lateral margins of terga, 4th tergum broadly brown on side, 5th brown, tinged yellow. Genitalia not dissected for study.

Lengths: body 7.7 mm; wing 8.4 mm.

♀. As in ♂ except 5th tergum yellow along posteromedian margin, 6th tergum all yellow. Seventh segment, base of ovipositor, dark brown to blackish, slightly longer than wide, ca. equal in length to terga 4-5. Piercer subacute at apex, setae as in Fig. 102a. Three oval spermathecae, apical nipples short, necks bulbous (Fig. 102e).

Lengths: body, without ovipositor, 7.4 mm; wing 8.0 mm.

Holotype ♂, PAPUA NEW GUINEA: Gumi, nr Bulolo, 20.VIII.1979, on *Bambusa* leaf (H. Roberts) (BPBM 13,376). *Allotype* ♀, Vickery Crk, nr Bulolo, 21.VI.1979, on *Bambusa* (Roberts) (BPBM). 1♂, 6♀ paratypes with following data: PAPUA NEW GUINEA: same as holotype and allotype; Koroda, 40 km W of Tari, 1750 m, 15.IX.1963 (R. Straatman); Wau, 1200 m, II.1963 & XI.1965 (J. & M. Sedlacek, P. Shanahan); Finisterre Range, Saidor, Kiambavi Vill 1, 22-29.VII.1958 (W.W. Brandt); Aiyura, nr Kainantu, 1700-1800 m, 9.I.1965 (J.L. Gressitt). Paratypes in BPBM, FRSB, and UH.

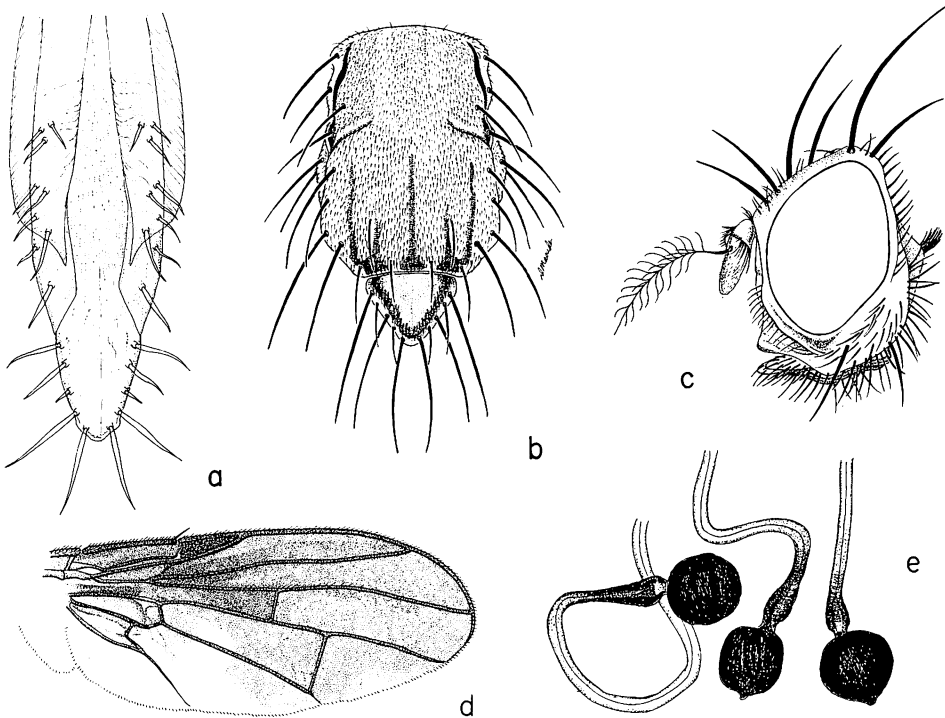


FIG. 102. *Themaroides vittata*: a, ♀ apex of piercer; b, thorax, dorsal view; c, head; d, wing; e, ♀ spermathecae.

Etymology. The name comes from the Latin *vitta*, "band," or "stripe," and refers to the vittate thorax.

***Themaroides xanthosoma* Hardy, new species**

Fig. 103

Diagnosis. This species can be readily differentiated from all known *Themaroides* by the thorax, which is entirely yellow to rufous except for a tiny spot of black behind each wing base (hidden except when wing is expanded). The wings are not as darkly colored as in other species and subhyaline streaks occur through the middles of most of the anterior cells (Fig. 103b).

♂. Yellow to rufous except tiny black spots mentioned above and brown to black markings on terga 4 and 5. *Head.* Nearly 2× higher than long, eyes oval, broadly round ventrally. Face gently convex (Fig. 103a), broadly rounded on median portion, narrowed into sharp keel extending between bases of antennae. Arista long plumose, moderately long hairs along inner margin. Lower superior fronto-orbital bristles at ca. lower 1/3 of front, slightly above inferior fronto-orbitals, one pair of strong cruciate inferior fronto-orbitals; several erect prominent dark brown to blackish hairs in line with inferior bristles. Posteroventral portion of occiput densely covered with erect yellow setae. *Thorax.* Densely black setose, including disc of scutellum. Bristles as in congeners, secondary supraalars strong, 2 pairs of small intermediate scutellars scarcely 2× longer than setae, scarcely differentiated. *Wing.* Costal spine longer than upcurved portion of vein Sc, 3rd costal section 3/4 as long as 2nd. Vein R₂₊₃ gently undulate. Paler brown than usual, subhyaline, tinged brown in cells, a streak through middle of cells R₁, R₃ and R₅ (Fig. 103b). *Abdomen.* Fourth tergum with brown median band on side, 5th tergum brown, apex broadly yellow. Genitalia not dissected for study.

Lengths: body 9.4 mm; wing 10.5 mm.

♀. Unknown.

Holotype ♂, PAPUA NEW GUINEA SE: Mura Riv, 2-10 m, 21.XII.1964 (J.L. & M. Gressitt) (BPBM 13,377).

Etymology. The name combines the Greek words *xanthos*, "yellow," and *soma*, "body," and refers to the characteristically yellow to rufous body.

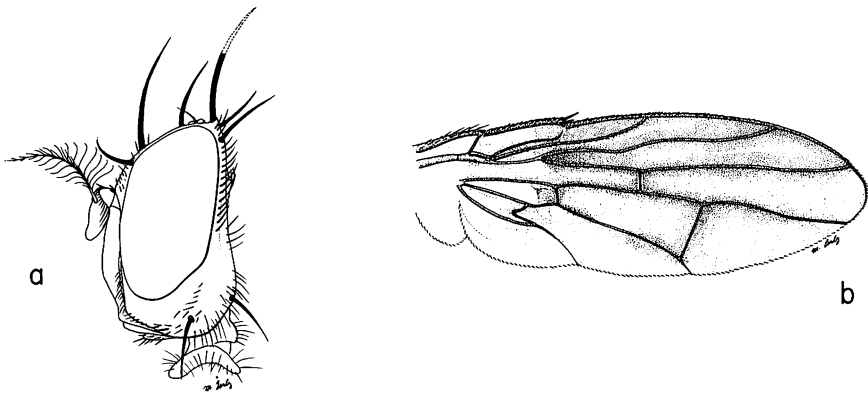


FIG. 103. *Themaroides xanthosoma*: a, head; b, wing.

Genus **Themaroidopsis** Hering

Themaroidopsis Hering, 1941, *Siruna Seva* 3: 17. Type-species: *Acanthoneura insignis* de Meijere, 1913, by original designation.

This genus fits near *Themarohystrix* Hendel but lacks setae on veins M_{3+4} and Cu and has M_{1+2} setose above to about the m crossvein. The basal portion of the wing is largely or entirely hyaline with a broad, transverse, hyaline mark in the middle of the wing between the r-m and m crossveins (Fig. 104) or in cells 1st and 2nd M_2 (Fig. 106), rather than being entirely dark brown or with not more than the posterior area hyaline. It rather closely resembles *Themaroides* in general facies but can be easily differentiated by the setose vein M_{1+2} and the vertical face.

Head (Fig. 105a) higher than long, eye nearly 2x higher than long. Two each of strong inferior and superior fronto-orbitals. Lower superior fronto-orbitals at upper 3/5-2/3 of front, both inferior fronto-orbitals close together at lower margin, upper inferior fronto-orbitals reclinate, lower bristles cruciate. Face raised medially, narrowed to sharp carina between bases of antennae, almost vertical in profile. Antenna < 1/2 length of face. Arista long plumose, longest rays almost equal in length to 3rd antennal segment, row of long hairs on inner margin. Thorax with usual complement of bristles including strong intrapostalars and secondary supraalars. Dorsocentrals slightly behind level between anterior supraalars. Scutellum with 6 strong bristles, densely setose on disc. Mid tibia with 2 strong apical spurs. Wing as noted above and as in Fig. 104, 106, and 107a, r-m crossvein near middle of cell 1st M_2 , lobe of cubital cell short, ca. 1/5 as long as vein Cu_{1+1stA} .

Four species are known.

KEY TO KNOWN SPECIES OF *THEMAROIDOPSIS*

- 1. Mesonotum with black longitudinal vittae; wing with large transverse hyaline mark in middle between r-m and m crossveins (Fig. 105d) 2
 Thorax rufous, lacking vittae; anterior portion of wing broadly dark brown from end of vein Sc to wing apex (Fig. 106) . . . (Solomon Is) **rufescens, n. sp.**
- 2. Without complete black longitudinal vitta on side of mesonotum; scutellum rufous, if 2 vittae on disc these not continuous with submedian vittae on mesonotum; no vittae on pleura 3
 Mesonotum with 5 complete black vittae, submedian pair continuous onto side of scutellum; pleura with 1 black vitta and 2 black spots; wing as in Fig. 105d **quinquevittata, n. sp.**
- 3. Transverse hyaline mark in area between r-m and m crossveins extending to costa on anterior margin, ending in cell 1st M_2 , not extending to posterior margin (Fig. 104); scutellum and pleura rufous, no black mark on mesonotum above humerus ... **insignis**
 Costal margin brown, transverse hyaline mark ends at vein R_{2+3} but below vein M_{1+2} is continuous with hyaline area covering all of posterior portion basad of apex of cell 1st M_2 (Fig. 107a); scutellum with black lines on disc (Fig. 107b); mesonotum with black spot above humerus, pleura with 2 black spots **tetrapilota, n. sp.**

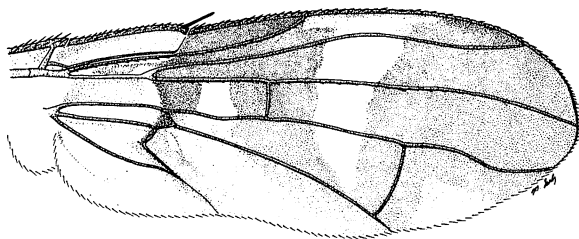


FIG. 104. *Themaroidopsis insignis*, wing.

***Themaroidopsis insignis* (de Meijere)**

Fig. 104

Acanthoneura insignis de Meijere, 1913, Nova Guinea 9: 366. Type-locality: "Lorentz-Fluss, Bivak-insel," Irian Jaya. Type ♀ in ZMUA. One ♂ and 1 ♀ paratypes in BMNH.

Diagnosis. This species can be readily differentiated from other known species by the transverse hyaline mark in the area between the r-m and m crossveins, which extends to the costa on the anterior margin and ends in cell 1st M_2 , not to the posterior margin of the wing (Fig. 104); the 3 narrow, longitudinal, black vittae on the mesonotum; and the prominent black spot in front of the anterior bristles on notopleuron. The thorax is rufous and in other details it fits the general characteristics of the genus.

Lengths: body and wing each 10.0 mm.

Distribution. Irian Jaya.

Specimens examined. Two paratypes in BMNH and 1 ♂ labeled "New Guinea" in ZMHB.

Remarks. Malloch (1939a: 435) says *T. insignis* is very similar to *Pseudacanthoneura septemnotata* Malloch from North Queensland and "may belong to this genus." He is not correct. These 2 species belong in different genus complexes. *Pseudacanthoneura* has the straight portion of vein Cu setose, M_{3+4} bare, scutellum bare on the disc, and very different wing markings.

***Themaroidopsis quinquevittata* Hardy, new species**

Fig. 105

Diagnosis. This species can be differentiated from other known species by the 5 complete black vittae on the mesonotum with the submedian pair continuous on the sides of the scutellum (Fig. 105b), the 1 black vitta and 2 black spots on the pleura, and the wing markings (as in Fig. 105d).

♂. *Head.* Shaped as in Fig. 105a and as noted under generic discussion. Yellow except compound eyes and ocellar triangle, brown to black transverse vitta across lower 3/4 of face, brown to black mark on upper portion of face between bases of antennae, brown to black border on side of lower submedian margin of front above lunule. Third antennal segment tinged brown on apical 2/3. *Thorax.* Yellow, 5 narrow longitudinal brown vittae on mesonotum (Fig. 105b), 1 across middle of mesopleuron from spiracle to hind margin just below lower mesopleural bristle and a short distance onto pteropleuron just above bristles. Short black streak along upper median margin of sternopleuron, oblong dark brown to black spot on lower margin of pteropleuron. Sub-

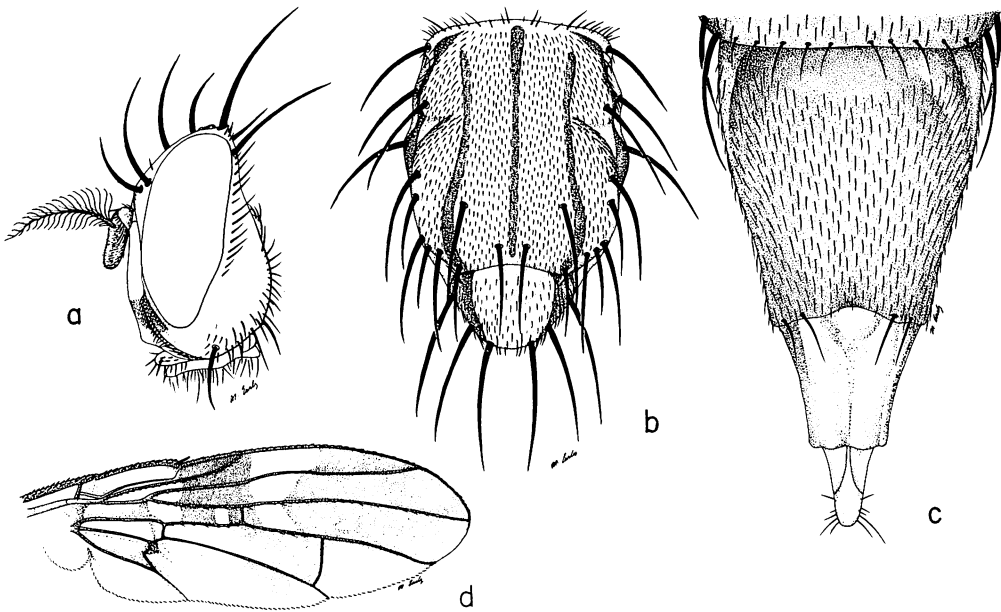


FIG. 105. *Themaroidopsis quinquevittata*: a, head; b, thorax, dorsal view; c, ♀ ovipositor; d, wing.

median vitta of mesonotum continuous along side of scutellum to bases of apical bristles. *Legs*. Yellow, rather strong posteroventral spines on front femur, 2 irregular rows of posterodorsal spines on apical 2/3. Middle femur with row of 6–8 black anterior bristles on middle. Hind tibia with ca. 5–6 anterodorsals, 2 anteroventrals at middle. *Wing*. As in Fig. 105d. *Abdomen*. Mostly pale yellow, brown on side of 1st tergum; third tergum with black anterior border, broadly interrupted in middle; 4th tergum largely black on side, a narrow dark brown to black continuous anterior border; 5th tergum shining black. Genitalia not dissected for study. Epandrium shining black.

Lengths: body 9.5 mm; wing 10.0 mm.

♀. As ♂ except front and face yellow to rufous, without distinct brown markings. Abdomen with complete black bands across median portions of terga 3 and 4, 5 narrowly yellow at base and apex. Tergum 6 and base of ovipositor entirely black. Base of ovipositor short, ca. equal in length to terga 5–6. Piercer blunt at apex (Fig. 105c).

Lengths: body, excluding ovipositor, and wing each 8.0 mm.

Holotype ♂, allotype ♀ (BPBM), PAPUA NEW GUINEA: Kiunga, Fly Riv, 24–25.IX.1967 (W.W. Brandt) (BPBM 13,378).

Etymology. The name combines the Latin *quinque*, “5,” with *vitta*, “band” or “stripe.” It refers to the 5 vittae on the mesonotum.

Themaroidopsis rufescens Hardy, new species

Fig. 106

Diagnosis. This species differs from all known species by the entirely rufous thorax in combination with the lack of a transverse hyaline mark through the middle of the wings.

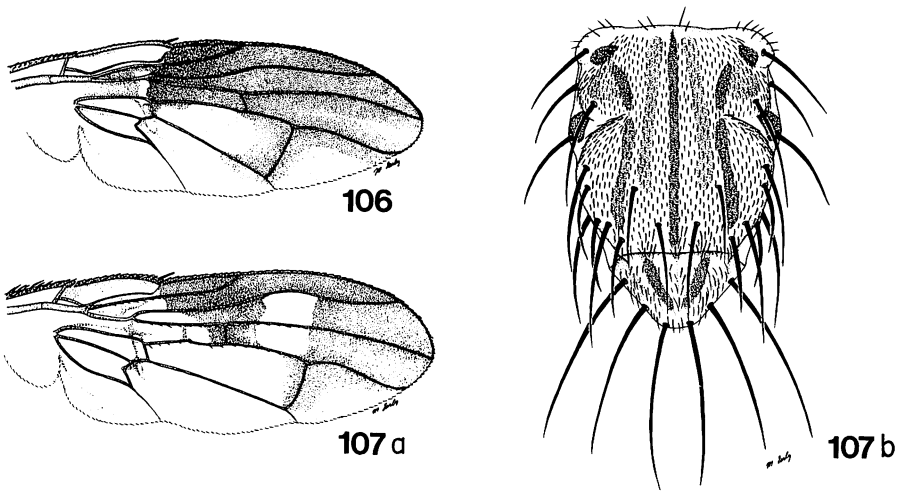


FIG. 106-107. 106, *Themaroidopsis rufescens*, wing. 107, *Themaroidopsis tetraspilota*: a, wing; b, thorax, dorsal view.

Fits generic characters given above and description of *T. quinquevittata* except for following details: head entirely yellow except compound eyes and ocellar triangle, lacking black markings on face; thorax rufous, small black spot behind wing base; entire anterior margin of wing dark brown to blackish from level of end of vein Sc to apex, including all of cells Sc, R₁, R₃ and R₅ except subhyaline streak through apicomedian portion of cell R₅; brown color continuing into upper portion of cell 2nd M₂, extending broadly across m crossvein and along vein M₃₊₄ ca. 2/5 of its length; costal and basal cells yellowish, wing otherwise hyaline (Fig. 106). Abdomen largely yellow to rufous, broadly black on sides of terga 4-5. Genitalia not studied.

Lengths: body 8.75 mm; wing 9.5 mm.

♀. Unknown.

Holotype ♂, PNG: N SOLOMON IS: Bougainville: NW Emperor Range, Mt Balbi, 2000-2400 m, 1-7.III.1968 (R. Straatman) (BPBM 13,379).

Etymology. The specific epithet combines the Latin *rufus*, "pale red," with the participial ending *escens*, "becoming." It refers to the all-rufous thorax.

Themaroidopsis tetraspilota Hardy, new species

Fig. 107

Diagnosis. This species differs from other known species by having the costal margin of the wings all brown between the apices of veins Sc and M₁₊₂; a transverse hyaline mark between r-m and m crossvein ending at vein R₂₊₃ and continuous with broad hyaline area covering all of posterior portion of wing basad of apex of cell 1st M₂ (Fig. 107a); black vittae extending onto the disc of the scutellum; and 2 black spots each on the anterior portions of the sides of the mesonotum and upper margins of the pleura.

♂. Fits characteristics of *T. quinquevittata* except markings on thorax and wing. Markings of mesonotum as in Fig. 107b. Median vitta narrow, straight sided from level with scapular bristles to level with intrapostalar. Submedian vittae interrupted at suture, ending ca. opposite postalar

bristles. Submedian vittae of scutellum not in line with those of mesonotum. Black spots on side of mesonotum above humerus and on upper 3/5 of notopleural callus. Black spots on pleura, on anterior dorsal margin of mesopleuron above spiracle, and near posterodorsal margin of that sclerite in front of bristles. Wing as noted in diagnosis above and as in Fig. 107a. Abdomen with basal 2 segments broadly yellow on base, narrowly so at apex, brown to black line across dorsal surface; 4th tergum black except for narrow yellow apical margin, 5th tergum black, yellow to rufous on posteromedian portion. Genitalia not dissected for study. Epandrium shining black.

Lengths: body 8.5 mm; wing 9.5 mm.

♀. As ♂ except abdomen yellow, spot of brown on side of 4th tergum, broad side and apex of 5th dark brown, 6th and 7th black. Basal segment of ovipositor short, not much longer than wide, ca. equal in length to terga 5-6. Ovipositor not extruded for study, apex of piercer blunt, apparently much like that of *T. quinquevittata*.

Lengths: body, excluding ovipositor, 8.0 mm; wing 9.0 mm.

Holotype ♂, PAPUA NEW GUINEA: upper Manki logging area, nr Bulolo, 5000 ft [1524 m], 16.II.1973 (F.R. Wylie & P. Shanahan) (AMS). Allotype ♀ (AMS), 1♀ paratype, same data as type except 23-30.III.1973. Paratype in the UH collection, to be deposited in BPBM.

Etymology. The name combines the Greek words *spilos*, "spot," and *tetra*, "4"; it refers to the 4 black spots on the sides of the thorax.

Genus *Tritaenipteron* de Meijere

Tritaenipteron de Meijere, 1914, Tijdschr. Entomol. 57: 209. Type-species: *Tritaenipteron eburneum* de Meijere, 1914, by monotypy.

For a revision of this genus refer to Hardy (1958: 376). For the description of the single known species from Indonesia (Java), *T. eburneum* de Meijere, refer to Hardy (1980: 157).

Genus *Trypanocentra* Hendel

Trypanocentra Hendel, 1914, Wien. Entomol. Ztg. 33: 77; 1915, Ann. Hist. Nat. Mus. Natl. Hung. 13: 433. Type-species: *Trypanocentra nigripennis* Hendel, 1914 [= *Trypanocentra atripennis* Malloch, 1939a], by original designation.

Trypanocentra has been poorly known. Hendel's (1914) original description allied it to *Themarohystrix*, but the 2 genera have very little in common except the predominantly brown wings and setose veins M_{3+4} and base of Cu. Malloch (1939a: 417, 427) differentiated *Trypanocentra* from *Clusiosoma* Malloch by the presence of 2 long, apical, ventral spurs on the mid tibia. The comparative sizes of the apical spurs are of no value as a generic character: the secondary spur is usually $> 1/2$ as long as the larger spur, but in some species may be less than $1/2$.

Trypanocentra, s. str., has been previously known only from female specimens; I had considered *Clusiomorpha* to be a synonym of it. I have since associated the male with the type-species of *Trypanocentra*. The male lacks ventral combs on the front basitarsus; the type of *Clusiomorpha* is a male and has a comb (Fig. 113). I find no characters for grouping females and I do not believe that secondary sexual characters of the male front tarsi are of generic importance in this group; I am thus reducing *Clusiomorpha* to subgeneric status. I also find considerable intergradation in the length of the 3rd

antennal segment, from 1/2 or less length of face to nearly equal in length to face [*T. (T.) longicornis*, n. sp.], and face shape intergrades, from broadly flattened down middle in *T. (C.) funebris* (Hering) to gently rounded down middle in *T. (T.) tricuneata*, n. sp., and other species.

Trypanocentra and *Clusiosoma* have been considered allied because of brown wings, setose vein M_{3+4} , and the presence of intrapostalar and lack of pteropleural bristles, but they each fit in a different group of genera because of development of the genitalia and front leg of the males and shape of face. By having the male surstylus short and broad and the lobes of the 10th sternum short (Fig. 108b), *Trypanocentra* fits in the same group of genera as *Rabaulia*, *Rabauliomorpha*, and *Nothoclusiosoma*. It is nearest to *Rabaulia* but differs by having the face vertical (Fig. 109a) or nearly so in profile, not swollen, convex on the lower portion, and vertex rounded or only slightly carinate and straight or nearly so as seen in front view. *Trypanocentra tricuneata*, n. sp., is somewhat aberrant in that a slight keel is developed on the vertex, but the margin is not so prominent and is not directed posteriorly as in *Rabaulia*; also, this species has vein M_{3+4} bare.

Eleven species are presently known, 6 in the subgenus *Trypanocentra*; 5 in the subgenus *Clusiomorpha*. The following belong in the nominate subgenus: *atripennis* Malloch; *longicornis*, n. sp.; *mallochi*, n. sp.; *nigradorsalis* (Hering); *nigrithorax* Malloch; and *tricuneata*, n. sp.

KEY TO KNOWN SPECIES OF *TRYPANOCENTRA*

- | | | |
|--------|---|--|
| 1. | Vein M_{3+4} setose above throughout most of its length | 2 |
| | M_{3+4} bare or with 1-2 setae near base; mesonotum black, yellow wedges extending posteriorly from anterior margin . . . (Papua New Guinea) | tricuneata , n. sp. |
| 2 (1). | Mesonotum and scutellum predominantly or entirely black; longitudinal vittae incomplete | 3 |
| | Mesonotum predominantly rufous or yellow with black vittae (Fig. 112e) | 9 |
| 3 (2). | Pleura conspicuously marked with black or predominantly black | 4 |
| | Pleura entirely yellow; antenna very short, not reaching middle of face . . . (Papua New Guinea) | (<i>Clusiomorpha</i>) . . . funebris , n. comb. |
| 4 (3). | Mesonotum black | 5 |
| | Anterior portion of mesonotum with yellow wedge-shaped mark on side above humerus . . . (Papua New Guinea) | nigradorsalis |
| 5 (4). | Third antennal segment black; ♂ front basitarsus with ventral comb of ca. 20 large teeth confined to basal 2/3 (Fig. 113) . . . (Irian Jaya) | |
| | | (<i>Clusiomorpha</i>) . . . gressitti , n. sp. |
| | Antenna yellow, if tinged with brown on 3rd segment (<i>atrifacies</i> , n. sp.) face and gena black, with gray pollinose; if ♂ has a basitarsal comb it extends to or near apex of tarsomere | 6 |
| 6 (5). | Face and gena yellow | 7 |
| | Face and gena all black, covered with gray pollen; front black except for orbital margins . . . (Papua New Guinea) | (<i>Clusiomorpha</i>) . . . atrifacies , n. sp. |
| 7 (6). | Costal and basal cells and posterobasal portion of wing subhyaline, contrasting with brown apical portion (Fig. 110); clypeus dark brown to black, ♀ femora mostly brown; ♂ legs yellow; no ventral comb on ♂ front basitarsus . . . (Papua New Guinea) | nigrithorax |
| | Wing uniformly dark brown; other characters not fitting those above | 8 |

- 8 (7). Legs, clypeus, and antenna yellow; ♂ front basitarsus with ventral comb . . . (New Guinea; Bismarck Is) (*Clusiomorpha*) . . . **nigripennis, n. comb.**
Femora mostly black; basal 2/3 of mid and hind tibiae brown; clypeus black; 3rd antennal segment brown at apex . . . (Indian Archipelago) **atripennis**
- 9(2). Occiput yellow, ♂ front basitarsus lacking black ventral combs 10
Upper median portion of occiput shining dark brown to black; ♂ front basitarsus contorted, curved on ventral margin, bearing 2 ventral combs of tiny closely placed black spinules (Fig. 112a) . . . (Papua New Guinea)
. (*Clusiomorpha*) . . . **biplectinata, n. sp.**
- 10 (9). Thorax yellow; 6 narrow dark brown to black vittae on mesonotum; 2 vittae on scutellum; 1 vitta on middle of pleura; 3rd antennal segment ca. 2/3 as long as face; 2 inferior fronto-orbital bristles **mallochi, n. sp.**
Mesonotum usually rufous; interrupted black line along side from above humerus; cervical sclerite yellow; 3rd antennal segment subequal in length to face; 3 pairs inferior fronto-orbital bristles **longicornis, n. sp.**

Trypanocentra (Trypanocentra) atripennis Malloch

Trypanocentra nigripennis Hendel, 1915, Ann. Hist. Nat. Mus. Natl. Hung. 13: 434 (preocc. de Meijere, 1913, secondary homonymy). Type-locality: "[I]ndischen Archipel." 1♀ specimen in the Hendel Collection NHMV is probably the type (cf. Hardy 1968: 128).

Trypanocentra atripennis Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 430. Replacement name for *nigripennis* Hendel, 1915.

Diagnosis. The type-species of the genus has not been clearly defined: it fits in the species group that has the thorax predominantly black, the face and gena yellow, and the wing uniformly dark brown. It differs from its congeners by having the femora mostly black, the basal 2/3 of the mid and hind tibiae brown, and the 3rd antennal segment brown at its apex.

Two specimens examined from Papua New Guinea seem to fit here, but without further specimens I cannot be sure that these specimens are conspecific with the type. One, ♂ (headless) from Wanuma, Adelbert Mts [800–1000 m, 25.X.1958 (J.L. Gressitt)], has 2 large, subequal spurs at the apex of the mid tarsus and no ventral comb on the front basitarsus. The other, a female from Wau, Morobe Province [1000 m, 13.X.1961 (J. Sedlacek)], has all yellow antennae and a rather short secondary spur, < 1/2 as long as strong spur. Both specimens have the basal 3 abdominal terga yellow to rufous [Hendel (1915) indicated the abdomen is shining black but he could have overlooked basal margins]; and vein M_{3+4} setose above nearly to a level with the m crossvein.

Two male specimens on hand labeled "Amboina, F. Muir" fit near this species but have rufous femora tinged lightly with brown and yellow antennae and tibiae. The front basitarsus lacks ventral combs. These specimens may be teneral.

Distribution. New Guinea(?). The type-locality designation of "[I]ndischen Archipel," equals Malay Archipelago including all of Indonesia and New Guinea. It seems probable that the type specimen could be from New Guinea.

Specimens examined. 1♀ in Hendel Collection (NHMV), without label.

Trypanocentra (Trypanocentra) longicornis Hardy, new species

Fig. 108

Diagnosis. This species fits in the nominate subgenus by lacking a basitarsal comb on the front tarsus of the male. It is near *T. (T.) mallochi*, n. sp., but it differs by the comparatively elongate 3rd antennal segment (Fig. 108a); the 3 pairs of inferior fronto-orbital bristles; the mostly rufous mesonotum with black vitta along only the lateral margins; the broadly brown to black meso- and sternopleura, the brown mesosternum; the yellow cervical sclerite; and the small cercus of the male, which is shorter than the epandrium (Fig. 108b).

♂. *Head.* Pale yellow except black ocellar triangle and reddish brown eyes. Shaped as in its congeners but raised median portion of face gently rounded, antennal furrows extend almost to oral margin, accomodating elongate 3rd antennal segment. Third segment nearly 4× longer than wide. Upper interior fronto-orbital bristles with 3rd pair smaller than others, at middle of front (Fig. 108a). Vertex with very slight keel. Supracervical setae conspicuous, consisting of 2 dense black clumps. *Thorax.* Mesonotum mostly rufous, black vitta on side from above humerus to wing base, slightly interrupted at level of suture, faint indications of brown postsutural vittae at ca. level of inner postalar and dorsocentral bristles, posterior portion of mesonotum faintly tinged brown. Scutellum mostly rufous, black on narrow dorsal margin, yellow on ventral surface. Humerus bright yellow, continuous yellow mark on upper portion of mesopleuron encompassing mesopleural bristles. Remainder of pleura mostly yellow, broad median band extending longitudinally through meso- and propleura; upper 1/2 of sternopleuron mostly brown to blackish, mesosternum brown. With usual complement of bristles including moderately well-developed intrapostalars; dorsocentral slightly behind level between supraalars. Pteropleural bristles lacking. *Legs.* Entirely yellow. Front femur normal in shape, with row of ca. 5 posteroventral bristles. Anterior spur of mid tibia ca. 3/5 as long as posterior. *Wing.* Entirely dark brown, very similar to wing of *T. (T.) mallochi*. Vein M_{3+4} setose almost to apex. *Abdomen.* Mostly yellow, tinged brown on side of 5th tergum. Male genitalia pale colored, shaped as in Fig. 108b, cercus small, inconspicuous.

Lengths: body 4.4 mm; wing 4.8 mm.

♀. As ♂ except rather distinct brown postsutural, lateral vittae in line with area between intrapostalar and innerpostalar bristles; submedian vittae with outer edges bordered by dorsocentral bristles, from ca. level with presutural bristles, fused on hind margin of mesonotum. Scutellum largely dark brownish, tinged rufous on dorsal portion. Abdomen yellow, ovipositor dark reddish brown to blackish. Base of ovipositor subequal in length to terga 4–6. Piercer not extruded for study.

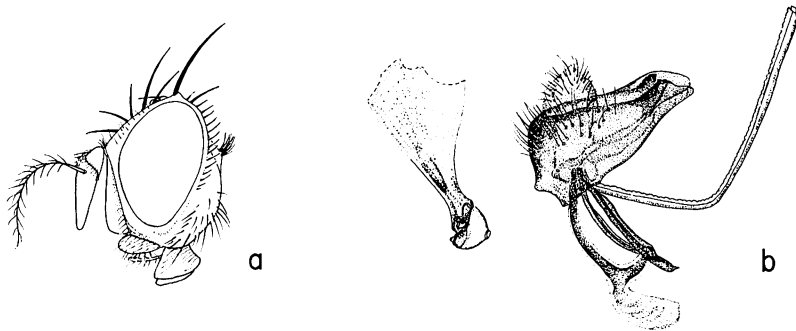


FIG. 108. *Trypanocentra longicornis*: a, head; b, ♂ genitalia.

Lengths: body, excluding ovipositor, and wing each 4.8-5.1 mm.

Holotype ♂, PAPUA NEW GUINEA: Western Highlands, Minj Riv Val, nr Uinba, 6200 ft [1890 m], 17.VIII.1963 (R. Pullen) (ANIC). 3♂ paratypes with following data: same as type; PAPUA NEW GUINEA: SE Nth Distr, The Managalase, SSW of Popondetta, 2500-3000 ft [762-914 m], VIII.1964 (Pullen); upper Chimbu Val, 2400 m, 5.VII.1955 (J.L. Gressitt). Paratypes in BPBM and UH.

Remarks. One male specimen has a pair of broad, submedian, dark brown to blackish vittae from the level of hind margin of the humerus and fused over the posterior margin of the mesonotum; also, the scutellum is dark brown to blackish over the dorsum, rather densely gray-brown pollinose.

Etymology. The specific epithet combines the Latin words *longus*, "long," and *cornu*, "horn," and refers to the comparatively long antennae.

Trypanocentra (Trypanocentra) mallochi Hardy, new species

Fig. 109

Diagnosis. This species can be differentiated from all known *Trypanocentra* by the yellow thorax with 6 dark brown to black longitudinal vittae on the mesonotum (Fig. 109c). It fits in the nominate subgenus by lacking a black ventral comb on the front basitarsus of the male. It is near *T. (T.) longicornis* but differs by the thoracic markings, shorter antenna, and by having only 2 inferior fronto-orbital bristles. Comparing thoracic markings it would somewhat resemble *Nothoclausosoma vittithorax* (Malloch), but the vittae are narrower with the submedian pair continuous across the disc of the scutellum and there is no black mark on the sternopleuron. Refer to the description of *N. vittithorax* for further details.

♂. *Head.* Pale yellow, small black spot on ocellar triangle, eyes dark-colored. Upper superior fronto-orbitals rather strong, almost equal in length to outer verticals. Antenna near middle of head, 3rd segment nearly 3× longer than wide, gradually tapered to apex, 2/3 length of face (Fig. 109a). *Thorax.* Pale yellow; vittae narrow, median pair almost in line with prescutellar bristles extending from level opposite hind margin of humerus to near hind margin of mesonotum (may be partially interrupted behind dorsocentral bristles). Lateral vittae extending from front margin

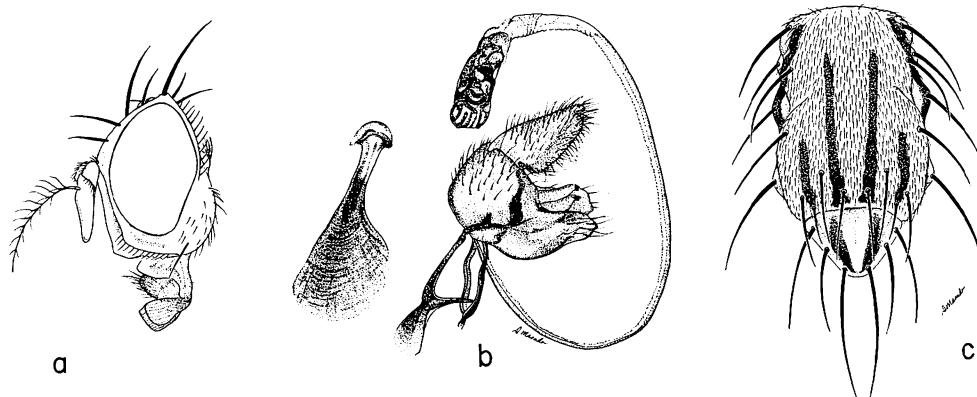


FIG. 109. *Trypanocentra mallochi*: a, head; b, ♂ genitalia; c, thorax, dorsal view.

above humerus, along side of mesonotum, across notopleural callus to wing base. Submedian vittae short, from near level with dorsocentrals to ca. inner postalar bristles. Pleura yellow, brown to black vitta from cervical sclerite to middle portion of meso- and pteropleura. Moderately strong pair of intrapostalar bristles, ca. $3/5$ as long as dorsocentrals (Fig. 109c). Scutellum with 2 brown vittae on disc, almost continuous with submedian mesonotal vitta, faint, only partially developed in some specimens. Metanotum dark reddish brown to black, narrowly separated down middle by yellow to rufous mark. *Legs.* Lacking ornamentation. Secondary spur of mid tibia ca. $3/5$ as long as strong spur. *Wing.* Uniformly dark brown, venation similar to other *Trypanocentra*. Strong costal spine at end of Sc, equal in length to upcurved portion of Sc. Vein R_1 setose above, 5-6 ventral setae on apical portion. Vein R_{2+3} setose nearly full length above and basal $1/2$ below. M_{1+2} with a few setae above basal of r-m crossvein, setose ventrally to beyond r-m. M_{3+4} setose $3/4$ its length above, bare ventrally, Cu setose above, bare ventrally. *Abdomen.* Predominantly pale yellow, discolored with brown on median portion of 1st tergum, 5th tergum dark reddish brown tinged black. Fifth tergum almost straight sided, nearly quadrate, slightly wider than long, longitudinal streak of yellow extending $2/3$ its length down median portion. Cercus unusually large, densely long-haired above and below, longer than wide, ca. equal in size to epandrium in lateral view. Surstylus short, thick, subacute on lower apex, numerous long thin hairs on apical portion. Other details as in Fig. 109b.

Lengths: body and wing each 4.8-5.0 mm.

♀. As ♂ except vittae on mesonotum and scutellum darker colored, more distinct; abdomen yellow, tinged brown on side of terga 5-6. Basal segment of ovipositor dark reddish brown on side, yellow to rufous on median portion. Basal segment comparatively short, slightly wider than long in situ, subequal in length to terga 4-6.

Lengths: body, without ovipositor, and wing each 5.8 mm.

Holotype ♂ (BPBM 13,380), allotype ♀ (BPBM), and 2♂ paratypes, PAPUA NEW GUINEA: Morobe Prov, Wau, 1150 m, rain forest understory, holotype collected 6.X.1976, others 27.V.1976, (W.C. Gagné); 2♀ paratypes, same loc., 10.IX.1981 (J.W. Ismay). Paratypes in DPIK and UH.

Etymology. The species is named in honor of J.R. Malloch.

Trypanocentra (Trypanocentra) nigradorsalis (Hering)

Clusiosoma nigradorsale Hering, 1941, Ann. Hist. Nat. Mus. Natl. Hung. 34: 59. Type-locality: Dilo, Papua New Guinea. Type ♀ in TMB.

Diagnosis. This species fits in the species complex characterized by a predominantly black mesonotum; conspicuously black-marked pleura; yellow face, gena, clypeus, and legs; vein M_{3+4} setose above almost to m crossvein; and uniformly dark brown wing. It differs by having a wedge of yellow on the side of the mesonotum above the humerus ending before suture. Male specimens on hand and the type as seen in my color photograph lack a ventral comb on the front basitarsus.

♀. Median portion of front brown. Pleura yellow, broad longitudinal black vitta from pronotum in front of mesothoracic spiracle across middle of meso- and pteropleura. Sternopleuron tinged lightly brown on upper portion, color intensified on anterodorsal portion. Abdomen mostly yellow, tinged brown, brown along anteromedian margin of each tergum. Basal segment of ovipositor dark brown to black, ca. equal in length to terga 3-6.

♂. As ♀ but brown to blackish on upper sternopleuron in 1 specimen and all yellow in another. Fifth tergum brown, tinged yellow to rufous, other terga yellow, lightly tinged brown.

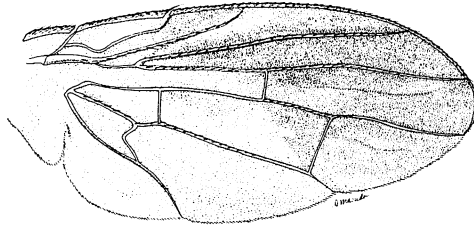


FIG. 110. *Trypanocentra nigrithorax*, wing.

Lengths: Hering gave wing length for type as 4.0 mm. The body and wing of the ♂ on hand each measure 4.25 mm.

Distribution. Papua New Guinea.

Specimens examined. Holotype ♀. PAPUA NEW GUINEA: 1♂, 1♀, Stony logging area, nr Bulolo, 30.I.1979 (H. Roberts); 1♀, Madang Centr Subdistr, Finisterre Range, Damaindi, 3500 ft [1066 m], X.1964 (R. Pullen); 1♂, Ilimo, nr Kokoda, 31.XII.1963 (D.K. McAlpine).

Trypanocentra (Trypanocentra) nigrithorax Malloch

Fig. 110

Trypanocentra nigrithorax Malloch, 1939, Proc. Linn. Soc. N.S.W. 64: 428. Type-locality: Wewak, Papua New Guinea. Type ♀ in BMNH.

Diagnosis. This species differs from other known *Trypanocentra* by having the costal and basal cells and broad posterobasal portion of the wing below a level with the r-m crossvein subhyaline, contrasting with the brown apical portion; and by having a brown to black clypeus. The femora of the female are brown to blackish, except at apices, and the legs of the male are all yellow.

Head and appendages pale yellow, clypeus brown to black, upper 1/2 of occiput glossy black. Front not marked with brown. Thorax shining black, lightly gray pollinose on dorsum, ivory-colored band on side from humerus along dorsal margin of mesopleuron under wing base to metapleuron. Halter yellow. Femora of ♀ mostly brown, broadly yellow on apices, narrowly on bases. Hind and middle tibiae of ♀ tinged brown medially. Secondary spine of mid tibia 3/5-2/3 as long as large spine. Front basitarsus of ♂ lacking ventral comb. Wing as in Fig. 110. Abdomen dark brown to blackish, pale yellow on side of terga 1-3. Base of ♀ ovipositor nearly equal in length to terga 3-6. Piercer not extruded; ♂ genitalia not relaxed for study; surstylus and lobe of 10th sternum short, broad.

Lengths: body of both sexes, excluding ♀ ovipositor, 4.0 mm. Wing of ♂ 3.8 mm; of ♀ 4.25 mm.

Distribution. Papua New Guinea.

Specimens examined. Holotype ♀. PAPUA NEW GUINEA: 1♂, Daradae Pln, 80 km N of Port Moresby, 500 m, 5.IX.1959 (T.C. Maa); 1♂, 3♀, Popondetta Subdistr, Buri, nr Sasambata, 30.X.1963 (D.K. McAlpine); 1♀, lower Sepik Riv, X.1959 (R. Pullen); 1♀, Sepik Riv, Angoram, X.1959 (Pullen).

Remarks. The status of this species, previously known only from the type female, has been questionable because Malloch (1939a) stated: "4th vein [M_{3+4}] with one or two setulae at middle on upperside and with short closely-placed setulae on about the cen-

tral third below." Malloch's specimen probably had the setae rubbed off vein M_{3+4} . A series on hand fits Malloch's description in all respects except that vein M_{3+4} has numerous setae above extending $2/3$ its length.

Trypanocentra (Trypanocentra) tricuneata Hardy, new species

Fig. 111

Diagnosis. This species superficially resembles *Hemiclusiosoma trivittatum* because of the 3 yellow marks on the anterior portion of the metanotum, but it differs by having the front leg of the male inornate; the male genitalia *Trypanocentra*-like; uniformly dark brown wings; mostly black pleura; 3 incomplete vittae from front margin of mesonotum, median wedge-shaped and extending nearly to prescutellar bristles; and lateral marks extending just beyond the suture. It resembles *T. (T.) nigridorsalis* by having no comb on the male front basitarsus, but differs by having vein M_{3+4} bare, 3 yellow wedges from anterior margin of mesonotum, and 2 black spots on the face. This species shows a definite relationship with *Rabaulia* by having the vertex rather distinctly keeled, and it closely resembles *R. fascifacies* because of the markings on the mesonotum. It differs from *Rabaulia* by having the keel not sharp-edged, less prominent, only gently convex as seen in front view, and not projecting posteriorly; the face vertical, not gibbose on lower portion; vein M_{3+4} bare; and the secondary spur of the mid tibia ca. $3/5$ as long as the large spur.

♂. *Head.* Vertex gently carinate, convex as seen in frontal view. Face raised on median portion, vertical in lateral view (Fig. 111a), pair of confluent (or nearly so) black spots in antennal furrow. Palpus brown on apical portions, upper occiput brown medially. Antenna entirely yellow, at middle of head, 3rd segment ca. $2/3$ length of face. *Thorax.* Shining black, 3 prominent yellow wedges posteriorly from anterior margin, median wedge to halfway between dorsocentrals and prescutellars, lateral wedges to just beyond suture. Extreme posterolateral corners of mesonotum, and side and venter of scutellum yellow. Pale yellow band from humerus across top margin of mesopleuron, below wing base to metapleuron. Posteroventral portion of sternopleuron covered by yellow mark. Dorsocentral bristles slightly behind level between anterior supraalar. *Legs.* Yellow with slight tinge of brown on femora, this most noticeable on hind pair. Secondary spur of mid tibia as noted above. Front legs inornate. *Wing.* Uniformly dark brown, venation as in congeners but vein M_{3+4} bare. Two rather strong costal spines, $4\times$ longer than costal setae. *Abdomen.* First 4 terga yellow with slight tinge of brown, 5th reddish brown on median portion, blackened on side, lateral margins narrowly yellow. Sterna yellow. Cercus rather small, length scarcely equal to width of surstylus. Surstylus short, broad, expanded apically, slightly upturned, completely hiding short lobes of 10th sternum.

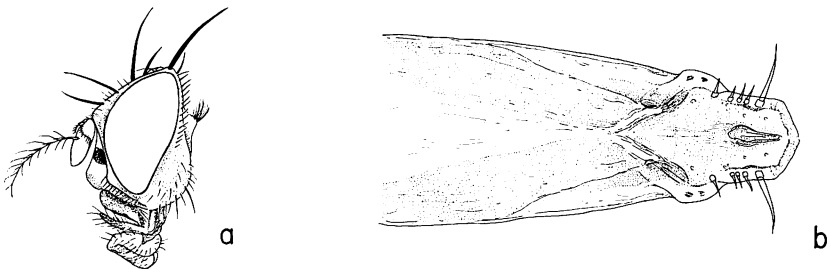


FIG. 111. *Trypanocentra tricuneata*: a, head; b, ♀ apex of piercer.

Lengths: body and wing each 4.0 mm.

♀. As ♂ except abdomen all yellow, faint tinge of brown especially through median portion. Basal segment of ovipositor dark reddish brown, tinged blackish on side, in situ ca. equal to terga 3-6. Piercer ca. 1/2 as long as segment 8, blunt at apex (Fig. 111b).

Holotype ♂, PAPUA NEW GUINEA: Morobe Prov, Wau, 1200 m, 10.XII.1978 (W.C. Gagné) (BPBM 13,381). *Allotype* ♀ (BPBM), same data except 21.V.1976. 3♂,3♀ paratypes with the following data: PAPUA NEW GUINEA: same as holotype; same as allotype; same locality as type, 8-14.XII.1976, at mercury vapor light (G.F. Hevel & R.E. Dietz IV); Waghi Val, Kerowagi area, 1700 m, 24.VI.1957 (D.E. Hardy); Adelbert Mts, Wanuma, 800-1000 m, 24.XI.1958 (J.L. Gressitt). Most paratypes in BPBM, some in UH.

Remarks. One specimen on hand lacks black marks on the face but has a faint brownish tinge on each side in the middle of the furrow (probably teneral).

Etymology. The specific epithet combines the Latin words *tri*, "three," and *cuneatus*, "wedge-shaped," and refers to the 3 yellow wedges on the mesonotum.

Subgenus *Clusiomorpha* Hering, new status

Clusiomorpha Hering, 1941, Mitt. Dtsch. Entomol. Ges. 10: 111. Type-species: *Clusiosoma funebre* Hering, 1941, by original designation.

Hering treated *Clusiomorpha* as a genus and placed it between *Clusiosoma* and *Themarohystrix*, differentiating it on the basis of the shape of the face (in profile) and the shorter antenna reaching only ca. 1/2 length of the face. As discussed above under the genus, these 3 genera are not related. I have found no significant differences in antennal lengths that would differentiate *Clusiomorpha* from *Trypanocentra* and separate it, only the presence of a ventral comb on the front basitarsus of the male [2 in *T. (C.) bipectinata*, n. sp.].

The following species are placed in *Trypanocentra (Clusiomorpha)*: *atrifacies*, n. sp.; *bipectinata*, n. sp.; *funebri* (Hering); *gressitti*, n. sp.; and *nigripennis* (de Meijere).

Trypanocentra (Clusiomorpha) atrifacies Hardy, new species

Diagnosis. This species fits in a species complex that has a predominantly shining black thorax, uniformly dark brown wing, yellow legs, and the front basitarsus of the male with a complete ventral comb. It differs from its congeners by the entirely black, densely gray pollinose face and genae and the black front, except for orbital margins.

♂. *Head.* Mostly black, yellow on lower 1/2 of occiput and along lateral margins of front. Vertex very slightly carinate, margin almost straight in frontal view. Antennae rufous, slight tinge of brown, 2/3 length of face. Clypeus yellow, narrow brown edge along top margin. Palpus and mouthparts yellow. *Thorax.* Predominantly shining black, faint reddish tinge in ground color. Humerus pale yellow, narrow pale yellow band along top margin of pleura to wing base. Meta- and hypopleura yellow, tinged brown. *Legs.* Entirely yellow. Comb of front basitarsus extending almost entire length. Secondary spur of middle tibia almost 1/2 as long as large spur. *Wing.* As noted above under Diagnosis, and with setae on vein M_{3+4} extending ca. 2/3 distance to m crossvein. *Abdomen.* Mostly dark brown to blackish, tinged yellow on side of terga 1-3. Genitalia apparently as in other *Trypanocentra*.

Lengths: body and wing each 4.25-4.75 mm.

♀. Unknown.

Holotype ♂, PAPUA NEW GUINEA: Kassem, 48 km E of Kainantu, 1350 m, 28.X.1959 (T.C. Maa) (BPBM).

Etymology. The specific epithet is a combination of the Latin *atra*, "black," and *facies*, "face," and refers to the black face.

***Trypanocentra* (*Clusiomorpha*) *bipectinata* Hardy, new species**

Fig. 112

Diagnosis. This is an aberrant species that differs from all known *Trypanocentra* by having the male front basitarsus contorted, bearing 2 rows of closely placed, small, black spinules over the ventral surface (Fig. 112a); the middle tibia of the male with 1 short, black, apical spine and 1 short, reddish brown spinule (Fig. 112c); the male wings with mottling of hyaline spots around the apical margin and in the field; and by the markings on the mesonotum as shown in Fig. 112e. It keys nearest to *T. (T.) mallochi* but the 2 are not related.

♂. *Head.* Pale yellow, eyes dark, black mark on ocellar triangle, brown coloring on upper occiput. Shape and arrangement of bristles as for genus. Antenna at middle of head, 2/3 length of face. Face slightly raised on median portion, vertical in profile. *Thorax.* Mesonotum black, median yellow vitta extending full length, humerus and lateral margins yellow, narrow, less distinct yellow to rufous vitta in line with dorsocentral bristles from ca. opposite hind margins of humerus to inner postalar bristles. Median vitta usually ending at ca. prescutellar bristles, hind margin of mesonotum brown to black (Fig. 112e). Scutellum dark brown to blackish on disc, yellow on side and venter. Pleura yellow, short narrow brown streak along upper edge of mesopleuron from spiracle almost to bristles on posterior margin. Notopleuron and narrow margin of mesonotum immediately above wing base dark brown, tinged black. Dorsocentral bristles in line with anterior supraalars. *Legs.* Pale yellow, front femur with row of moderately strong yellow posteroventral bristles nearly full length of segment. Front tibia not modified. Basitarsus slightly

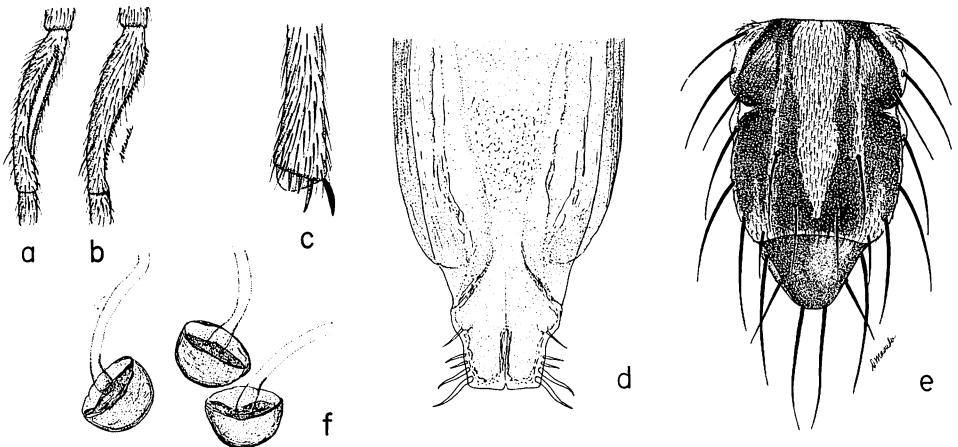


FIG. 112. *Trypanocentra* (*Clusiomorpha*) *bipectinata*: a, ♂ front basitarsus, inner view; b, ♂ front basitarsus, lateral view; c, apex middle tibia; d, ♀ apex of piercer; e, thorax, dorsal view; f, ♀ spermathecae.

thickened basally, curved on inner margin, bearing 2 rows of closely placed teeth along ventral surface extending $4/5$ length (Fig. 112a-b). *Wing*. Veins R_{4+5} and M_{1+2} rather markedly divergent, apex of cell R_5 much wider than remainder of cell 1st M_2 . Wing mostly black, hyaline around apex, mottling of hyaline marks through median and posterior portions. Vein M_{3+4} conspicuously setose along most of its length. *Abdomen*. First 3 terga yellow, tinged brown especially through median portions. Fourth tergum brown, tinge of yellow in ground color. Sterna yellow. Cercus small, length ca. equal to width of surstylus. Surstylus short, broad, rounded apically, completely hiding lobe of 10th sternum.

Lengths: body and wing each 4.0 mm.

♀. As ♂ except front sometimes has tinge of brown medially, longitudinal brown mark across mesopleuron much broader, more distinct, extending onto pro- and pteropleura. Wing evenly brown-colored. Abdomen mostly yellow to rufous, tinged brown especially on median and lateral portions of terga. Basal segment of ovipositor dark reddish brown to blackish, almost equal in length to terga 3-6 in situ. Piercer short, ca $3\times$ longer than wide, truncate at apex (Fig. 112d). Three mushroom-shaped spermathecae (Fig. 112f).

Lengths: body, excluding ovipositor, and wing as ♂.

Holotype ♂, PAPUA NEW GUINEA: Morobe Prov, Wau, 1250 m, 10.VIII.1965, in malaise trap (J. & M. Sedlacek) (BPBM 13,383). *Allotype* ♀, same data as holotype except 12.VIII.1965. 2♂, 8♀ paratypes, all but 1 same data as type except VI, VIII & IX.1965 and III.1966 (1 by J.L. Gressitt); 1, Karimui, 1080 m, 13.VII.1953 (M. Sedlacek). Paratypes in BPBM and UH.

Etymology. The specific epithet is a combination of the Latin words *bi*, "two," and *pecten*, "comb," and refers to the 2 combs on the front basitarsus of the male.

Trypanocentra (Clusiomorpha) funebris (Hering), new combination

Clusiosoma funebre Hering, 1941, Ann. Hist. Mus. Natl. Hung., Zool. 34: 61. Type-locality: "Simbang, New Guinea." Type ♂ in TMB.

Diagnosis. This species can be readily differentiated from all known *Trypanocentra* by the entirely pale yellow pleura. The antenna is distinctly shorter than in most species, ca. $2/5$ the length of the face.

Head and appendages pale yellow, middle of front and upper median portion of occiput dark brown to black. Upper superior fronto-orbital bristles well developed, longer than postverticals. Thorax mostly pale yellow, mesonotum, dorsal portion of scutellum, and metanotum shining black, lightly gray pollinose. Legs yellow. Two strong subequal spurs at apex of mid tibia. Front basitarsus of ♂ with complete ventral comb of short black closely placed spinules. Wing uniformly dark brown, slightly paler at extreme base, proximal to humeral crossvein. M_{3+4} setose above $2/3$ - $3/4$ distance to m crossvein. Abdominal terga 1-3 yellow, tinged brown. Terga 4-6 black, tinged rufous on basomedian portion of 4th. Sterna yellow except brown on 5th. Male surstylus and lobe of 10th sternum short, thick, typical of *Trypanocentra*.

Lengths: body and wing each 5.0-5.5 mm.

Distribution. Papua New Guinea.

Specimens examined. Holotype and paratype (BMNH). 3♂, PAPUA NEW GUINEA: Wau, 5-17.I.1974 (S. Shinonaga).

Trypanocentra (Clusiomorpha) gressitti Hardy, new species

Fig. 113

Diagnosis. This species fits in the *nigripennis* species complex by having a predominantly black thorax, yellow legs, uniformly dark brown wings, and vein M_{3+4} conspicuously setose along most of its length. It differs from its congeners by having the 3rd antennal segment dark brown to black and the ventral comb on the male front basitarsus consisting of ca. 20 large teeth that are ca. equal in length to the width on the basal 2/3 of the tarsomere. In other species of *Clusiomorpha* this comb is composed of many tiny teeth that extend the full length.

♂. *Head.* Normal in shape and bristling. Front yellow, dark brown to black mark on ocellar triangle. Occiput yellow, dark brown marks on upper portion. Face tinged brown medially, yellow on side and gena. Clypeus yellow, narrow rim of brown around upper margin. Palpus yellow to rufous in type and 2 paratypes, tinged brown at apex on 1 paratype. *Thorax.* Black, reddish tinge in ground color on dorsum. Pale yellow to cream-colored mark along upper margin of pleura from humerus below wing base to metapleuron. Meta- and hypopleura yellow, tinged lightly with brown. Dorsocentral bristles slightly behind level between supraalar. *Legs.* Pale yellow. Comb of front basitarsus as noted above and as in Fig. 113. Secondary spine at apex of mid tibia ca. 1/2 size of large spine. *Wing.* As noted above, setation on M_{3+4} 2/3 or more to m crossvein. *Abdomen.* Basal 4 terga mostly yellow, tinged brown medially. Fifth tergum dark reddish brown, tinged black. Cercus small. Surstylus short, thick, rounded at apices, completely covering short lobe of 10th sternum.

Lengths: body and wing each 3.75–4.0 mm.

♀. Unknown.

Holotype ♂ (BPBM 13,384), 3♂ paratypes, IRIAN JAYA: Guega, W of Swart Val, 1200 m, 15.XI.1958 (J.L. Gressitt). 1 paratype in BPBM, 2 in UH.

Remarks. One specimen at hand has an all-yellow face and another has the face very slightly tinged with brown.

Etymology. The species is named after the late J.L. Gressitt, who has done more than any other person to advance the knowledge of the insects of New Guinea.

Trypanocentra (Clusiomorpha) nigripennis (de Meijere), new combination

Acanthoneura nigripennis de Meijere, 1913, Nova Guinea 9: 366. Type-locality: Alkmaar, Irian Jaya. Lectotype ♀ in ZMUA.

Clusiosoma tenuifemorale Hering, 1941, Ann. Hist. Mus. Natl. Hung. 34: 58. Type-locality: Friedrich-Wilhelmshafen [Madang], Papua New Guinea. Type ♂ in TMB. New synonymy.

Clusiomorpha adjusta Hering, 1947, Siruna Seva 6: 3. Type-locality: New Lauenburg, Bismarck Archipelago. Type ♀ in BMNH. New synonymy.

Diagnosis. This species fits in the species complex that has the mesonotum all black, the pleura marked with black, the wing uniformly brown, and the face, gena, clypeus



FIG. 113. *Trypanocentra (Clusiomorpha) gressitti*, ♂ front basitarsus.

and legs yellow. It keys near *T. (T.) nigrithorax* and *T. (T.) atripennis* but is placed in the *Clusiomorpha* subgenus by having the ventral comb on the male front basitarsus.

Fits most characteristics of the subgenus *Trypanocentra*. Thorax shining black on dorsum. Pale yellow on humerus, narrow dorsal border on mesonotum to wing base. Pleura mostly brown to blackish, tinged rufous. Front femur with ca. 6 posteroventral bristles along nearly full length, basitarsal comb of male front legs extending full length. Abdomen variable in coloration from dark brown to black, basal terga yellow, broadly yellow on side, discolored with brown medially on terga 3-6.

Lengths: body 5.0-6.0 mm; wing 4.5-5.0 mm.

Distribution. Widespread throughout the island of New Guinea and Bismarck Archipelago.

Specimens examined. Types of all 3 taxa. PAPUA NEW GUINEA: 1♂, Wewak, 2-20 m, 15.X.1957 (J.L. Gressitt), 1♀, Popondetta, 60 m, 26.IX.1963 (P. Shanahan). IRIAN JAYA: 2♀, Guega, W of Swart Val, 1200 m, 15.XI.1958 (Gressitt); 1♂, 3♀, Wamena, 1700 m, 10-25.II.1960 (T.C. Maa & E.J. Ford Jr); 1♂, Genjam, 40 km W of Hollandia, 100-200 m, 1-10.III.1960 (Maa). PNG: BISMARCK ARCH.: NEW IRELAND: 2♂, 1♀, Gilingil Pl'n, 2 m, 17.VII.1956 (Gressitt); NEW BRITAIN: 1♂, Gazelle Penin., Gaulim, 140 m, 21-27.X.1962 (J. Sedlacek); 2♂, Duke of York I, Manuan, 21.IV.1962 (*Noona Dan* Exped.).

Remarks. Hering (1941a) obviously was not acquainted with *Trypanocentra* and had not seen the type female of *T. nigrithorax*. I find no characters for separating the taxa that he treated as distinct species. *Clusiomorpha adjusta* Hering was based upon 1 female specimen that he differentiated from *C. tenuifemorale* by its more extensively blackened body with the thorax and abdomen all black except for a pale yellow band over the upper margin of each mesopleuron from humerus to wing base. I find the coloration of the body variable and see no characters for separating these species.

Walkeraitia Hardy, new genus

Type of genus: *Helomyza nivistriga* Walker, 1861.

Walker's (1861) *Helomyza nivistriga* has been an enigma. It is known only from the unique female type which has the head missing. I am unable to place it in any known genus. It seems to fit near *Lyronotum*, *Rioxina*, and *Themaroides* by having only veins R₁ and R₄₊₅ setose; the mid tibia with 2 strong spurs and the scutellum bearing 6 strong marginal bristles and densely setose on the disc. It is differentiated from any known Acanthonevrini by the wing markings and venation (Fig. 114).

Etymology. The name comes from Walker combined with *aitia* (Greek), "responsible for"; the gender is feminine.

Walkeraitia nivistriga (Walker), new combination

Fig. 114

Helomyza nivistriga Walker, 1861, J. Proc. Linn. Soc. Lond., Zool. 5: 246. Type-locality: "New Guinea." Type ♀ in BMNH.

Diagnosis. This species is known only from the type. It is differentiated by the characters given in the generic description. The following description is based upon my study of the type at the BMNH and a color photograph of this specimen.

Head missing. Thorax yellow to rufous, densely setose including scutellum. Dorsocentral bristles well behind supraalar, ca. opposite outer postalars. Pleurotergum bare except for micro-

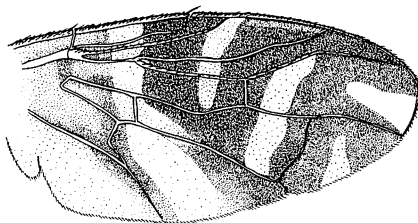


FIG. 114. *Walkeraitia nivistriga*, wing.

scopic pubescence. Scutellum with 6 strong equal-sized bristles. Legs yellow, mid femur with patch of ca. 7 short, black setae on anterior surface near middle. Posterior femur with ca. 6 black dorsal setae on apical 1/4. Wing as in Fig. 114. Third costal section between apices of veins Sc and R_1 short, $< 1/2$ as long as 4th section, 4th section subequal in length to 5th. Veins R_1 and R_{4+5} setose above. R_{2+3} moderately curved, R_{4+5} strongly curved upward beyond r-m crossvein. Vein M_{1+2} curved sharply downward at ca. middle of section before r-m crossvein. Crossvein m slightly convex, with a distinct petiole on median portion. Wing mostly dark brown beyond forking of radius and media, yellow, tinged brown basally. Complete broad hyaline transverse band at level with forking of media. Narrow hyaline wedge from costa just beyond apex of vein R_1 across cells R_3 and R_5 to vein M_{1+2} . Hyaline crossband just beyond r-m crossvein from vein R_{4+5} to M_{3+4} . Hyaline wedge at wing apex into cell R_5 , another hyaline wedge in apicomedial portion of cell 2nd M_2 , not extending to m crossvein. Abdomen entirely yellow. Ovipositor base ca. equal in length to last 3 visible segments of abdomen.

Lengths: body and wing each 13.5 mm.

Distribution. New Guinea.

Specimens examined. The holotype ♀ (unique).

Genus *Xarnuta* Walker

Xarnuta Walker, 1856, J. Proc. Linn. Soc. Lond., Zool. 1: 28. Type-species: *Xarnuta leucotela* Walker, 1856, by monotypy.

Xarnuta can be readily differentiated from other Acanthonevrini by the 8–12 strong, black, marginal bristles on the scutellum. The species of this genus all have the same general characteristics: short plumose arista (Fig. 115b); short, thick, densely black setose bodies; bodies entirely pale yellow to rufous, tinged faintly with brown, brown discolorations on middle of abdominal terga in *X. obsoleta* (Wiedemann) and *X. lativentris* (Walker), and paired brown spots on terga in *X. sabahensis*, n. sp. The only characters other than size differences for separating most species are the wing markings. It is evident, however, that important diagnostic features are present in the female genitalia. To date, females of only 4 species have been studied. These 4 species fall into 2 distinct groups: the piercer of ovipositor sharp pointed at apex and bifid dorsoventrally as in Fig. 118b and the spermathecae covered with microscopic spicules and oblong in shape (*confusa* Malloch, *leucotella* Walker) (Fig. 115d, 118a); and the piercer flattened dorsoventrally, serrated or dentate at apex and the spermathecae binodose (Fig. 121b) or round with slender necks (Fig. 120a) (*sabahensis*, n. sp.; *stellaris* Hardy).

The piercing structures of the ovipositor of these 2 species groups (complexes) are so radically different it would seem probable they should belong in different genera, but all other details are so remarkably similar that it does not seem advisable to separate them. When the females of all species of the genus have been studied, it should be possible to assess the phylogenetic value of these characters.

Head nearly 2× higher than long, face raised down middle, straight in profile (Fig. 115b). Three pairs inferior fronto-orbital bristles evenly spaced on lower 2/3 of front, 2 pairs superior fronto-orbitals on upper 1/4. Ocellar bristles small, scarcely 2× larger than interfrontal setae. Supracervical and postoccipital setae pale yellow. Thorax with usual complement of strong black bristles, intrapostalars almost equal in size to prescutellars. Scutellum ca. as long as wide, flat dorsally, conspicuously setose. Sometimes peppering of minute reddish brown or black spots on dorsum of scutellum and hind portion of mesonotum, but this apparently is not a reliable character. Legs all yellow. Front femure with row of moderately strong posteroventral bristles along entire surface. Mid femur with row of 8-9 short anterior bristles on basal 1/2, 4 short posteroventral bristles on basal 1/3, 3-5 preapical posterior bristles in oblique row. Mid tibia with about 7 dark brown to black posterior bristles at middle, 2 strong subequal apical spurs. Hind femur with row of anterior bristles at basal 3/5, row of closely placed anteroventral bristles on apical 1/3. Hind tibia with complete row of closely placed short brownish yellow anterodorsal bristles full length of segment. Wing (Fig. 115e, 116, 117) predominantly brown, variously marked as pointed out in key and descriptions of species. Veins R₁ and R₄₊₅ setose. Crossvein r-m well beyond middle of cell 1st M₂. Costal spines rather short. Lobe of cell Cu ca. 1/2 as long as vein Cu_{1+1stA}. Male genitalia as in Fig. 118d, surstylus short, truncate at apex. Vanes of aedeagal apodeme not fused, arising separately from axis of apodeme. Ejaculatory apodeme large, equal in size to remainder of genitalia. Basal segment of ♀ ovipositor short, ca. equal in length to terga 5+6, spiracular openings at basal 1/3 of segment. Piercer and spermathecae as noted above in generic diagnosis.

The genus is poorly known; no biological information is available. Nine species are presently recognized: 2 (*X. inopinata* Hering and *X. fenestellata* Hering) are Palaearctic, known only from the Talysch Region, Caspian Sea; 7 are known from the Oriental and Australasian regions.

KEY TO SPECIES OF *XARNUTA* FROM THE ORIENTAL AND AUSTRALASIAN REGIONS

- 1. Wing with prominent hyaline marks on anterior and posterior margins; apex of cell R₅ mostly brown (Fig. 119) 2
 Lacking hyaline marks on margin except apex of R₅ entirely hyaline or subhyaline 5
- 2. Abdomen with paired brown spots on terga 3-5; wing with preapical hyaline crossband narrow, nearly complete transverse band at level between crossveins, 3 brown round marks isolated in middle of subhyaline field, arranged transversely at level with cell Sc (Fig. 120c) ... (Sabah) **sabahensis, n. sp.**
 Not as above; abdomen unicolorous or slightly discolored, brown down middle of terga 3
- 3. One or 2 hyaline spots bisecting cell R₁; no more than 2 spots in R₃ beyond r-m crossvein 4
 Cell R₁ entirely brown; 3 hyaline marks in cell R₃ beyond r-m crossvein (Fig. 119) ... (Java; ?Sarawak) **obsoleta**

4. Abdomen uniformly yellow to rufous, tinged faintly with brown; 2 hyaline spots in apex of cell R₅; usually 2 in cell R₁; hyaline mark in 2nd M₂ extending ca. 2/3 across cell (Fig. 121c); piercer of ♀ ovipositor serrate (Fig. 121a), spermathecae binodose (Fig. 121b) . . . (Philippines; New Ireland; Papua New Guinea; Solomon Is) **stellaris**
 Brown discoloration on middle of abdominal terga; spot each at apex of cells R₁, R₃ and R₅; large quadrate mark from margin in 2nd M₂ halfway across cell R₅ (Fig. 117) (♀ unknown) . . . (Sulawesi) **lativentris**
5. Wing with numerous, small, hyaline spots scattered throughout the field (Fig. 116) . . . (Papua New Guinea; New Britain) **cribralis**
 Not as above 6
6. Wing dark brown except for hyaline apex, somewhat paler on postero basal portion (Fig. 118c) . . . (widespread throughout Oriental Region) **leucotela**
 Wing mostly pale brownish yellow, some dark brown transverse markings most prominent at level with crossveins (Fig. 115e) . . . (Solomon Is; Queensland, Australia) **confusa**

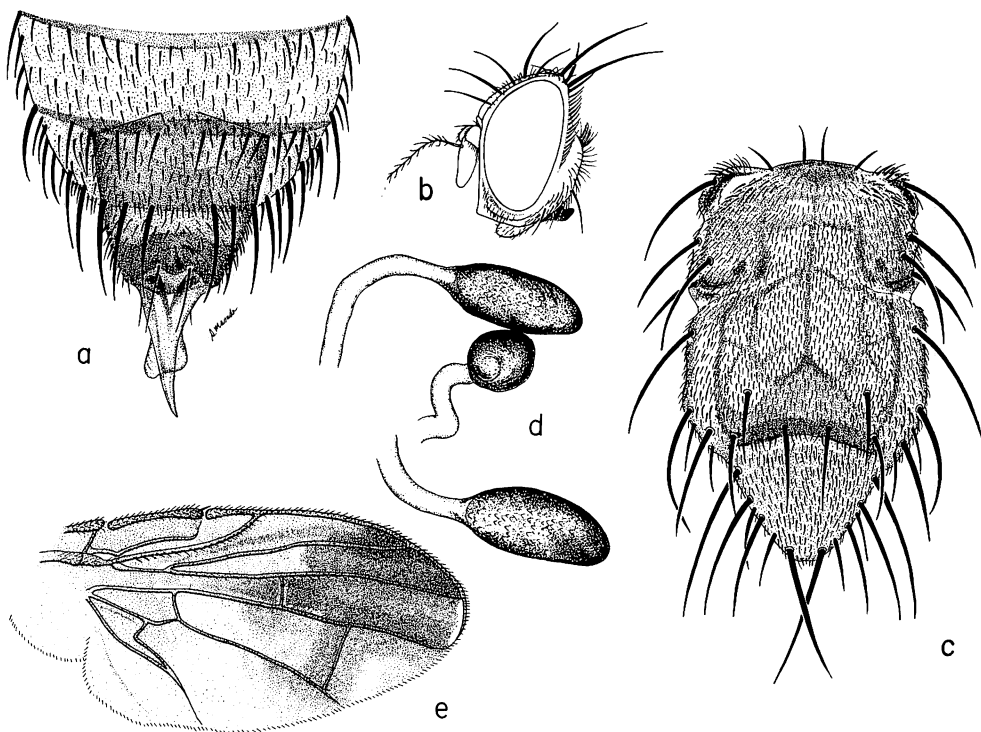


FIG. 115. *Xarnuta confusa*: a, ♀ abdomen; b, head; c, thorax, dorsal view; d, ♀ spermathecae; e, wing.

Xarnuta confusa Malloch

Fig. 115

Xarnuta confusa Malloch, 1939, Ann. Mag. Nat. Hist. Ser. 11, 4: 261. Type-locality: Malaupaina, Solomon Islands. Type ♀ in BMNH.

Diagnosis. This species is related to *X. leucotela* Walker but differs by the comparatively paler-colored wing.

Wing pale yellow, tinged brown, with dark brown transverse markings, most distinct at level of m crossvein (Fig. 115e). ♀ spermathecae may be distinctive; it consists of 1 oval and 2 oblong reservoirs, conspicuously spiculated under high magnification (Fig. 115d). Head as in Fig. 115b. Thorax as in Fig. 115c. Female ovipositor as in Fig. 115a.

Lengths: body 6.0–6.5 mm; wing 5.5–6.25 mm.

Distribution. Solomon Islands; Queensland, Australia; Papua New Guinea.

Specimens examined. Holotype. 1♂ from Queensland (NHMV) (determined by Hering). 1♂, 1♀, "Queensland, Pres. by E. Brunette" (BMNH). 3♂, 2♀ with the following data. AUSTRALIA: N QUEENSLAND: Mulgrave Riv, 6 km W of Gordonvale, 11.I.1976 (D.K. McAlpine); nr Cairns, Lake Placid, 2.I.1939 (McAlpine); Cloudie Riv, 5 mi [8 km] W of Mt Lamond, 9.I.1972 (McAlpine & G.A. Holloway); Daintree, 31.XII.1968 (McAlpine); Daintree Riv Distr, Thornton Ra to Hutchinson Crk, 8.I.1967 (McAlpine & Holloway). 5 specimens with data as follows appear to fit here: PAPUA NEW GUINEA: Mt Giluwe, 2550 m, 27.V–6.VI.1963 (J. Sedlacek); Normanby I: Wakaiuna, Sewa Bay, 11–20.XII.1956 (W.W. Brandt); Central Prov, Lomari Creek, 16.VIII.1981 (J.W. Ismay).

Xarnuta cribralis Hering

Fig. 116

Xarnuta cribralis Hering, 1941, Ann. Hist. Nat. Mus. Natl. Hung. 34: 57. Type-locality: Kapapapa, Papua New Guinea. Cotypes in TMB.

Diagnosis. This species fits near *X. leucotela* but differs by having numerous small hyaline spots scattered in the wing (Fig. 116). I see no other characters for separating these 2 species. The female is unknown.

Distribution. Papua New Guinea and New Britain.

Specimens examined. 2♂ cotypes. 1♂, PNG: BISMARCK ARCH.: W NEW BRITAIN: Hoskins, 20.X.1974 (D.P.A. Sands); 1♂, PAPUA NEW GUINEA: Central Prov, 20 km SE of Port Moresby, 26.II.1983, swept from bushes (J.W. Ismay).

Xarnuta lativentris (Walker)

Fig. 117

Trypeta lativentris Walker, 1860, J. Proc. Linn. Soc. Lond., Zool. 4: 158. Type-locality: Makasar [Ujung Pandang], Sulawesi. Type ♂ in BMNH.

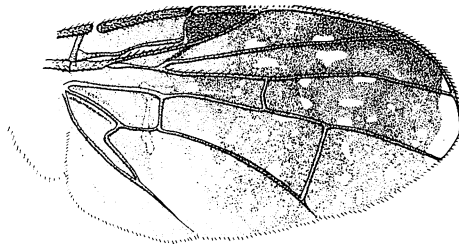


FIG. 116. *Xarnuta cribralis*, wing.

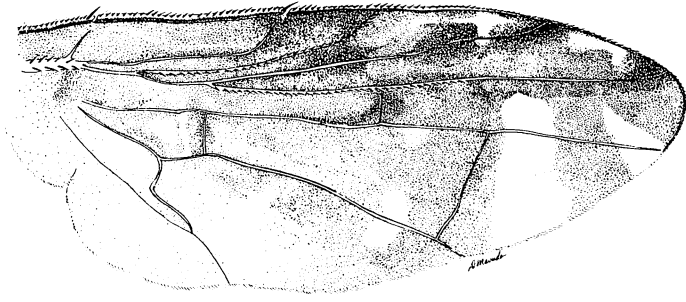


FIG. 117. *Xarnuta lativentris*, wing.

Diagnosis. This species fits near *X. stellaris* Hardy but differs by having only 1 hyaline mark in cell R_1 , no complete streak across cell 1st M_2 , and a large quadrate mark from the margin in cell 2nd M_2 over halfway across cell R_5 (Fig. 117). The abdomen is discolored with brown on the middle portion of the terga. The female is unknown.

Lengths: body 6.0 mm; wing 5.5 mm.

Distribution. Sulawesi.

Specimens examined. Holotype ♂ (unique).

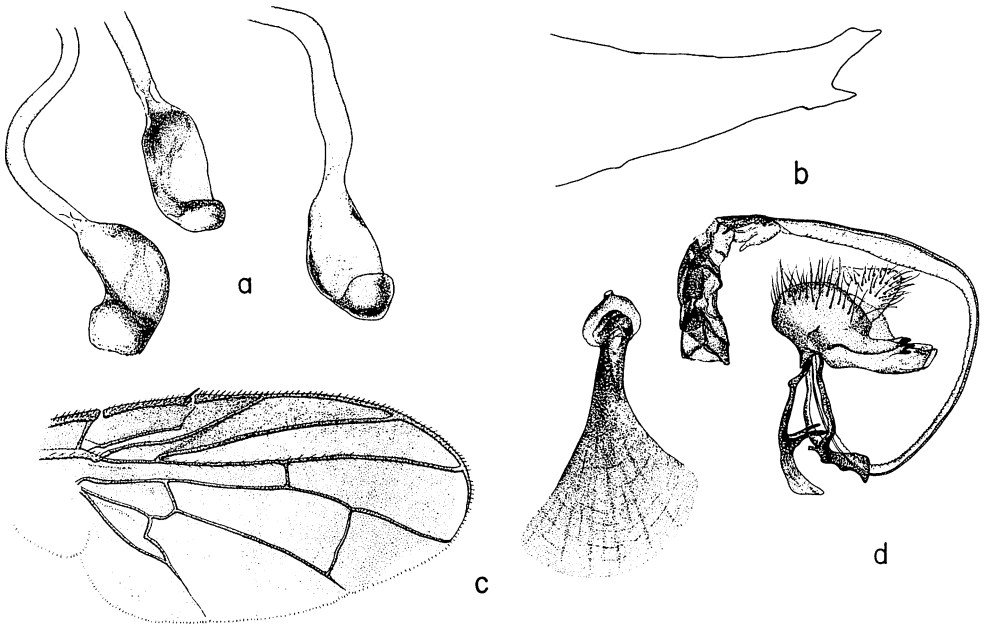


FIG. 118. *Xarnuta leucotela*: a, ♀ spermathecae; b, ♀ apex of piercer, lateral view; c, wing; d, ♂ genitalia.

Xarnuta leucotela Walker

Fig. 118

Xarnuta leucotelus Walker, 1856, J. Proc. Linn. Soc. Lond., Zool. 1: 28. Type-locality: Singapore. Type ♂ in BMNH.

Oxyphora malaica Schiner, 1868, Reise der österreichischen Fregatte *Novara*, Dipt. 2: 74. Type-locality: Ceylon [Sri Lanka]. Type in NHMV not located (cf. Hardy 1968: 144). Synonymy follows Bezzi (1913: 75) and de Meijere (1914: 199).

Diagnosis. This species fits very near *X. confusa* by having the abdomen uniformly yellow, tinged brown, but lacking brown markings. It differs by having the wing predominantly dark brown except for the hyaline apex and somewhat paler posterobasal portion (Fig. 118c). The female ovipositors are the same, bifid at apex with a subapical ventral point (Fig. 118b). The spermathecae are different in the 2 specimens compared: in *X. leucotela* all 3 spermathecae are approximately the same size and elongate oblong (Fig. 118a). Male genitalia as in Fig. 118d.

Lengths: body 7.25 mm; wing 6.7 mm.

Distribution. Widespread throughout the Oriental Region from Sri Lanka, throughout SE Asia and Indonesia, into Irian Jaya.

Specimens examined. Walker's type. Ca 15 specimens with the following data. SRI LANKA: Galge, at bank of Menik Riv, Ruhunu Natl Prk, 6.X.1963 (Univ Lond. Ceylon Exped). PHILIPPINES: Luzon, Mt Isarog, IV.1916 (Frey). THAILAND: Chiangmai Prov, Fang, 500 m, 12-19.IV.1958 (T.C. Maa). LAOS: Vientiane Prov, Muong Vang Vieng, 350 m, 17.II.1968 (F.G. Howarth). MALAYSIA: SABAH: forest camp, 19 km N of Kalabakan, X.1962 & XI.1962 (Y. Hirashima & K.J. Kuncheria); Gomantong Caves, 20 m [32 km] S of Sandakan, 22-26.X.1958 (Maa). INDONESIA: MALUKU: Aru, 1911 [no collector given] (det. *Trypeta diversata* Walker by Froggatt, which is not correct). IRIAN JAYA: Pasin Putih Beach, Manokwari and Anggori, 14.V.1973 (E. Suharjo). INDONESIA: JAVA: Doro, 800-1300 ft [244-369 m], [no date] (Muir).

Xarnuta obsoleta (Wiedemann)

Fig. 119

Trypeta obsoleta Weidemann, 1824, Analecta Entomol., p. 53. Type-locality: Java. Location of type unknown.

Xarnuta morosa de Meijere, 1914, Tijdsch. Entomol. 57: 198. Type-locality: Batavia [Jakarta], Java. Type ♂ in ZMUA.

Diagnosis. This species differs from other *Xarnuta* by having cell R_1 entirely brown, 3 hyaline marks in cell R_3 beyond the r-m crossvein, and the abdomen discolored with brown down the median portion.

Lengths: body 5.0 mm; wing 4.5 mm.

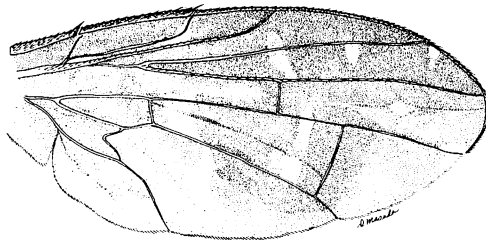


FIG. 119. *Xarnuta obsoleta*, wing.

Distribution. Java, Sarawak.

Specimens examined. De Meijere's type: 1♂, [INDONESIA] JAVA: Bogor, VIII.1953, on *Canangium odoratum* (Tjaa Tjienmo). 1♂, MALAYSIA: SARAWAK: Sarikei Distr, Rejang Delta, 15-25.VII.1958 (T.C. Maa).

Remarks. The Sarawak specimen appears to be this species but is teneral and in poor condition.

***Xarnuta sabahensis* Hardy, new species**

Fig. 120

Diagnosis. This species differs from all known species of *Xarnuta* by having paired brown spots on abdominal terga 3-5; a preapical hyaline crossband on the wing that leaves the extreme apex pale brown; and a narrow, nearly complete transverse band extending through the area between the r-m and m crossveins from vein R_{4+5} , across cells R_5 , 1st M_2 , and M_4 , evanescent just before the margin. A transverse mark from the costa in the apex of cell Sc extends across cells R_1 and R_3 at the level of the r-m crossvein. Four hyaline marks bisect cell R_3 and 3 brown round marks are isolated in a subhyaline field in the middle of the wing, arranged transversely at level with Sc (Fig. 120c). Vein R_{2+3} is gently undulate, crossvein r-m pale yellowish. The female ovipositor, which has the piercer flattened dorsoventrally and toothed preapically, indicates this species may be related to *X. stellaris*; the 2 species are quite different, however, as shown in Fig. 120b and 121a.

Fits all characteristics of *Xarnuta* except face gently concave in profile with oral margin slightly protruded. Basal segment of ♀ ovipositor short, ca. as wide as long, equal in length to terga 5-6, brown at apex. Piercer short, evenly tapered to sharp point at apex, flattened dorsoventrally, 2 prominent preapical teeth on side (Fig. 120b). Spermathecae with elongate necks (Fig. 120a).

Lengths: body and wings each 4.5-4.7 mm.

♂. Unknown.

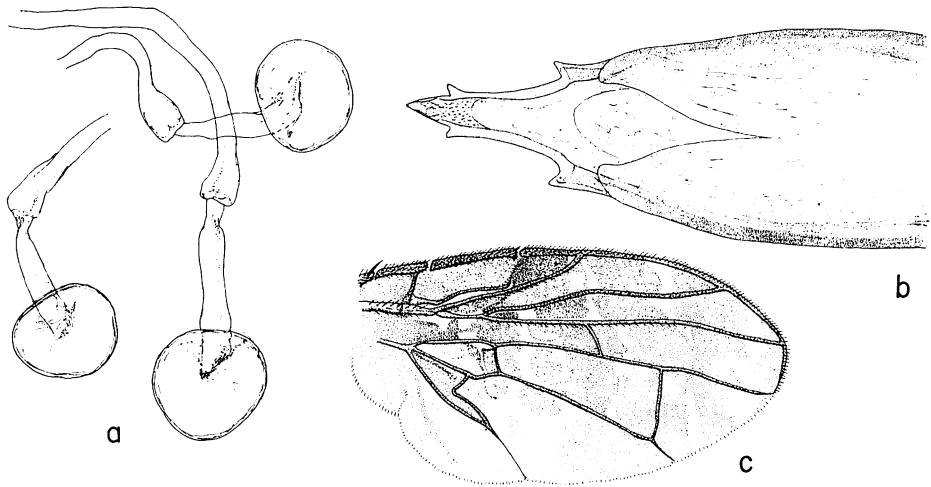


FIG. 120. *Xarnuta sabahensis*: a, ♀ spermathecae; b, ♀ apex of piercer; c, wing.

Holotype ♀ (BPBM 13,385), and 1♀ paratype (BPBM), MALAYSIA: SABAH: forest camp, 19 km N of Kalabakan, 60 m, 25–27.X.1962 (K.J. Kuncheria).

Etymology. The specific epithet refers to the state of Sabah.

Xarnuta stellaris Hardy

Fig. 121

Xarnuta stellaris Hardy, 1970, Entomol. Medd. 38: 85. Type-locality: Uring Uring, Palawan, Philippines. Type ♂ in ZUMC.

Diagnosis. This species apparently fits near *X. lativentris* but until the female of the latter can be studied the relationship cannot be confirmed. It differs by having the abdomen uniformly yellow to rufous, tinged faintly with brown; by lacking brown discoloration on the middle of the terga; by having 2 hyaline spots in the apex of cell R_5 and usually 2 in R_1 ; and by having a hyaline mark in 2nd M_2 ca. $2/3$ across cell (Fig. 121c).

Female ovipositor as in Fig. 121a, basal segment brown at apex. Eighth segment with large scales on basal portion. Piercer short, thick, scarcely over $3\times$ longer than wide, flattened dorso-ventrally, conspicuously serrated on apical margin (Fig. 121a).

Lengths: body 5.5–5.75 mm; wing 4.8–5.0 mm.

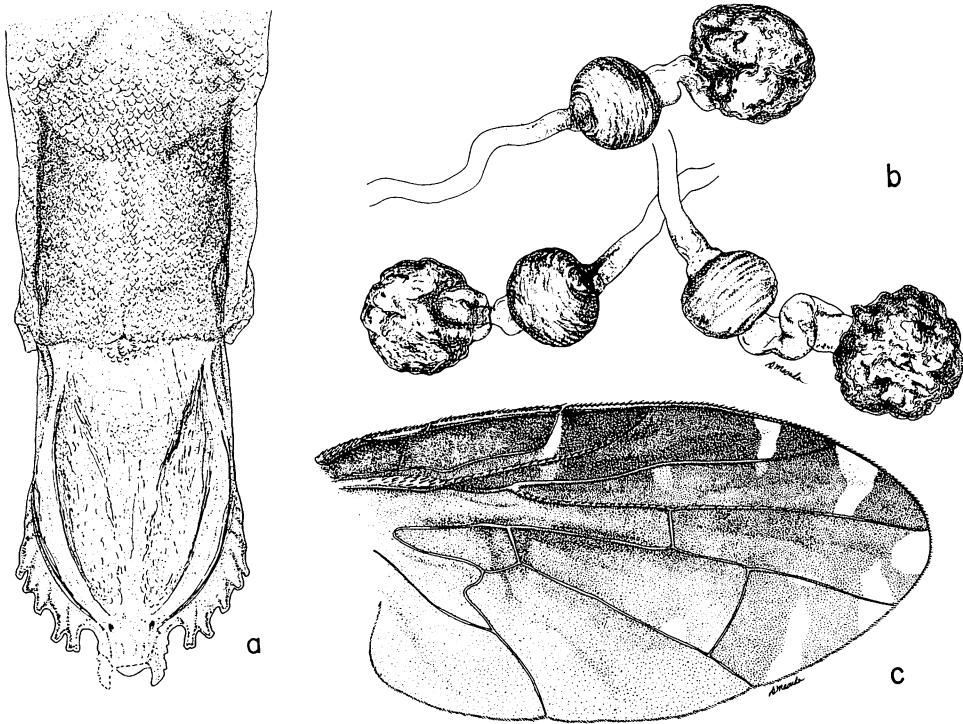


FIG. 121. *Xarnuta stellaris*: a, ♀ piercer; b, ♀ spermathecae; c, wing.

Distribution. Philippines (Palawan), New Ireland, Papua New Guinea, and Solomon Islands.

Specimens examined. Type series. PAPUA NEW GUINEA: 1♀, Western Prov., Oriomo Govt Stn, 26-28.X.1960 (J.L. Gressitt); PNG: BISMARCK ARCH.: NEW IRELAND: 1♂, Kandan, 1.I.1960 (W.W. Brandt). SOLOMON IS: Malaita: 1♀, Auki, 20 m, 3-5.X.1964 (M. Sedlacek); San Cristoval: 1♀, Kira Kira, 15.VIII.1960 (C.W. O'Brien).

Undescribed genus A

Fig. 122

One specimen examined apparently represents a new genus and species of Acanthonevrini, but is in poor condition and cannot be named until further specimens are seen. It fits in the group of genera that have only 1 inferior fronto-orbital bristle and 1 strong spur at the apex of the middle tibia. It is readily differentiated from all known genera by the hyaline wing except for brown in the subcostal cell and on the apex (Fig. 122).

Antennae missing. Hind portion of head swollen below, at widest point ca. 2/3 as wide as eye. Interfrontal area almost bare, only a few small pale setae. Ocellar bristles strong, equal in size to inferior and lower superior fronto-orbitals. Postocellars small, ca. equal in size to setae of occipital row. Face straight on median portion in profile, slightly receding above oral margin. Mesonotum polished black, including humerus. Scutellum pale yellow, basomedian portion brown. Propleura and upper portions of meso- and pteropleura yellow. Intrapostalar bristles lacking, secondary scutellars 1/3 as long as apicals. Legs all yellow. Wing as in Fig. 122. Third costal section ca. 1/2 as long as 2nd, veins R_{2+3} and R_{4+5} straight, crossvein r-m near basal 3rd of cell 1st M_2 , lobe of cubital cell short, 1/5-1/6 as long as Cu_{1+1stA} . Abdomen mostly polished black, yellow on median portions of terga 1-3.

Lengths: body, excluding ovipositor, 3.4 mm; wing 4.0 mm.

Specimen examined. 1♀, PAPUA NEW GUINEA: N slope Mt Strong, 2600-3000 m, 8-10.I.1968 [no collector given] (BPBM).

Undescribed genus B

Fig. 123

One specimen examined apparently represents a new genus and species fitting the group of genera that have 1 strong apical spur on the middle tibia, 2 pairs of inferior fronto-orbital bristles, setalike ocellar bristles, short 3rd costal cell, strong costal spine, intrapostalar bristles present, and arcuate brown bands on the apical 1/2 of the wing

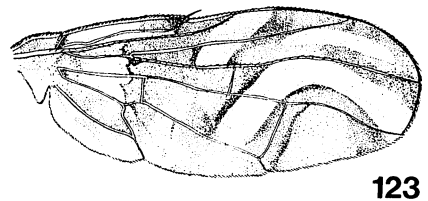
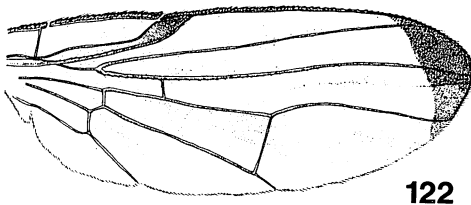


FIG. 122-123. 122, Undescribed genus A, wing. 123, Undescribed genus B, wing.

(Fig. 123). By having the thoracic and abdominal bristles all yellow, it keys nearest to *Tritaenopteron*, but the 2 genera are not related and are differentiated by the characters given in the key to genera above.

Predominantly yellow species. Frontal bristles brownish yellow, inferior fronto-orbitals approximate on lower portion of front. Genal, upper vertical, and upper setae of occipital row yellow. Face prominently concave in middle in lateral view. Antenna yellow, normal in size, 2/3 length of face. Thorax, abdomen, and legs entirely yellow, 4 dark brown to blackish spots along hind margin of mesonotum; pair of pale brown submedian vittae and pale brown spot above humerus; side of postscutellum brown, brown on posterior margins of terga 5-6. Wing mostly pale brown with following hyaline markings: basal portion; large mark from costa in cell R_1 to vein R_{2+3} ; longitudinal streak through cell R_3 ; arch through apicoposterior portion; wedge through cell 2nd M_2 and another through M_4 (Fig. 123).

Lengths: body, excluding ovipositor, 5.5 mm; wing 6.5 mm.

Specimen examined. 1♀, PAPUA NEW GUINEA: 22 km SE of Okapa, 2100 m, 28.VIII.1964 (J. & M. Sedlacek) (BPBM).

Remarks. The specimen is not in perfect condition and the taxon is not being named until more specimens can be studied.

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