THE WALKER TYPES OF FRUIT FLIES (TEPHRITIDAE-DIPTERA) IN THE BRITISH MUSEUM COLLECTION[1]

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While at the British Museum (Natural History) during the summer of 1954 I studied, as thoroughly as possible in the time available, the types of the species which Francis Walker had described under genera of fruit flies and also the species of Tephritidae which I could find in the collection which Walker had described under other family combinations (subfamilies of Walker). My original plan had been to study the Walker species belonging in the subfamily Dacinae but after the work got under way it became obvious that his generic concepts were so confused and so much synonymy and changing of names was involved that I decided I should study as many of his species as possible. From the literature I have accumulated a list of 172 species which Walker described under genera which belong in the Tephritidae. I have studied 127 of these, plus four species described under *Helomyza* and *Noeeta*, and I am reporting on these in this paper. I am appending a list of the 51 species (all described as *Trypeta*, except for three as *Tephritis* and four as *Helomyza*) which I did not have an opportunity to study. Nine of these could not be found in the British Museum collection and the types may be lost. I have checked the National Museum of Victoria at Melbourne, Australia, and apparently none of these is present in that collection.

Walker's fruit-flies were described under the family Muscidae and in the subfamilies Ortalides and Helomyzides. His generic, as well as family, concepts were somewhat confused and many of the species which he described as *Dacus* and *Trypeta* belong in the families Otitidae, Pyrgotidae, Chloropidae and Lauxaniidae; some of his "Helomyzides" belong to various genera of Tephritidae.

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It has been impossible to deal with most of Walker's species in the past and many of these have never been properly placed in the literature. It is hoped that this study will clarify most of the confusion which has existed regarding the species treated here.

I am treating the Walker species in alphabetical order under the original generic combinations. I have attempted, as far as possible, to place each species in its correct generic combination and to record all synonyms which came to light as a result of this study. I am also presenting a check list of these species arranged alphabetically under their correct generic combinations. In order to place many of the species properly it has been necessary to do revisional studies on certain of the genera involved. These studies will be published following this paper.

I am much indebted to Harold Oldroyd, Paul Freeman, and D. J. Clark of the British Museum (Nat. Hist.) staff, and to the late F. Van Emden of the Commonwealth Institute of Entomology for the constant help given me while making this study. The drawings have been made by my wife, Agnes Hardy; these should add materially to the value of this study.

ALPHABETICAL ARRANGEMENT OF THE WALKER SPECIES ACCORDING TO THEIR ORIGINAL COMBINATIONS

Adrama consors Walker

(Pl. 11, fig. 1)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 296.

The type was not labeled. One specimen (sex?) is in the collection which might possibly be the type. It is labeled "East Indies, Bachan", plus a handwritten label "*consors*". The specimen is in poor condition, the abdomen is lost, the head has been broken off and glued on a card; the legs and thorax are intact and the wings are good except one is broken at the tip.

It does not belong to the genus *Adrama* Walker. The femora are without ventral spines; vein R2 + 3 is not wavy; the humeral bristle is absent and only the basal scutellar bristles are present (two scutellars). It is an Adramini and runs to *Sosiopsila* Bezzi in Hering's key (1941, *Siruna Seva*, **3** : 4) but is very different from any of the species in the British Museum collection. I see no distinct generic differences except possibly that the cubital cell in *consors* is produced into an acute lobe at lower apex and is but slightly produced in *Sosiopsila*. Also in the latter, the lower apex of cell 1st M2 is farther from the wing apex (last section of vein M3+4 about equal in length to r-m crossvein); in *consors* it is very close to wing margin, scarcely one-half the length of the r-m crossvein.

I am considering this under the new combination *Sosiopsila consors* (Walker) until the group can be more thoroughly studied. *S. consors* is a large, chiefly rufous species. It is very distinctive because of the presence of a very narrow brown costal band extending from the apex of subcosta to about middle of cell R5. The cubital cell is also chiefly yellow fumose (refer to Pl. 11, fig. 1). *Thorax:* Entirely rufous

except for a pair of characteristic eye-like black spots, one on each side just before suture. The pleuroterga are covered with fine hairs. *Head :* Face entirely yellow. Front yellow with a large black spot above lunule. Apparently one pair of inferior fronto-orbital and one pair of superior fronto-orbital bristles present on the front. Antenna yellow, third segment about three times longer than wide. Arista short plumose, longest hairs scarcely more than width of basal portion of arista. *Legs :* All rufous to yellow, the middle tibia has one long and one medium-sized apical spur.

Length : Wings, 9·0–9·5 mm.

Adrama selecta Walker

(Pl. 11, fig. 2)

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 118.

This is the type of the genus *Adrama* Walker.

The type is apparently not in the British Museum collection. One male specimen, in good condition, is present from " New Guinea, Bachan, *A. R. Wallace,* B.M. 1858–142 "; the type was from " Aru Island " (Aroe). Another specimen (sex?), in poor condition, lacking both head and abdomen is labeled " New Guinea *W. W. Saunders* B.M. 1869–4 ". The latter had been determined as *Adrama selecta* by F. A. Perkins, University of Queensland.

The male specimen which Perkins (1939, *Univ. of Queensland Papers, Dept. Biol.* **1 (10)** : 5) mentioned, " with the abdomen missing from Aru Is. (*A. R. Wallace*) ", as having been studied from the British Museum collection was probably the type. It is not known what happened to the specimen ; however, I was not able to find it in the collection.

Enicoptera rufiventris Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163. New synonymy based upon a comparison of the type of the latter with the *Adrama selecta* specimens in the British Museum collection.

According to Osten Sacken (1881, *Annali del Museo Civico di Storia Naturale di Genova,* **16** : 474), *Psila cruciata* Walker (1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 126) is a synonym of *selecta.* I was unable to find the type of *cruciata* in the British Museum collection and am unable to confirm this.

A. selecta has been adequately described by Perkins (*loc. cit.*) but his wing photograph is not good. A rather distinct transverse band extends across the middle of the wing from the costal margin, over the r-m crossvein through the middle of cell 1st M2, to vein M3 + 4 and the apical portion of the wing is more intensely fumose than is shown in Perkin's figure. The apical portion beyond the level of the m crossvein is fumose, this fumosity fades out slightly in the apices of cells R5 and 2nd M2 (Pl. 11, fig. 2).

The species is related to *A. determinata* (Walker) but is differentiated by having the propleura and sternum of thorax entirely rufous and by having two black spots on the face.

Length : Wing, 8·0–9·0 mm.

Callantra smieroides Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 154.

Walker's description indicated a female but the specimen in the collection labeled type and with Walker's handwritten label " *smieroides* " is a male. It is in rather poor condition, the wings and most of the legs are missing. The specimen is labeled " Macassar, Celebes, *A. R. Wallace* ".

This is the type of *Callantra* Walker and the species has been correctly interpreted in the literature. For a description and figures refer to Hardy & Adachi (1954, *Pac. Sci.* **8** (**2**) : 151–152).

Dacus absolutus Walker

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 22.

The type female from " Ceram, *A. R. Wallace*, 68–4 " is in good condition but the specimen is obviously teneral ; the ptilinum is still partly protruded. The mesonotum seems well colored but the wings are pale, the markings are not distinct. This apparently is a *Dacus* (*Neodacus*) and was not included in my revision (Hardy, 1954, *Proc. Ent. Soc. Wash.* **56** (**1**) : 5–23). It runs to couplet 5 but is quite different from any of the species treated. The costal band is rather faint (tenerality?), it appears to be rather narrow, extending just through the top margin of cell R3 ; it is not broad as in those which fit in couplet 7 and the mesonotum has but two postsutural yellow stripes. In this regard it keys to *affinis* Hardy, from India, but the costal band is not interrupted and no isolated wing spot is present, etc.

Descriptive Notes on the Type

Head : Front almost two times longer than wide, chiefly yellow, discolored with brown in the median portion and with two pairs of inferior fronto-orbital bristles. Face with a pair of moderately large, round black spots. The first two antennal segments are rufous, the third is reddish brown ; the third segment is slightly longer than the face. *Thorax :* Predominantly black in ground color, the mesonotum is rather densely gray pollinose with no evidence of longitudinal vittae. The lateral yellow stripes are very broad and extend to the hind margin of the mesonotum. The top margin of the pleura is almost entirely rufous from the humerus to the wing base, a slight discoloration of brown through the front margin of the mesopleura separates the yellow rufous coloring of the mesopleural stripe from being continuous with that of the humerus. Scutellum tinged with brown (it may be slightly discolored in this specimen), the apical portion appears to have a faint discoloration of brown but no distinct brown mark is present. *Wings :* As described above with no distinct brown costal band but with rather faint yellow fumosity extending along the costa to the apex of vein R4 + 5, this extends along the top margin of cell R3. The cubital streak is not pronounced, there is no distinct fumosity in this portion of the wing. The first two costal cells are entirely hyaline, the second is almost completely filled with

microtrichia ; the first has microtrichia only in the apical portion. The r-m cross-vein is oblique, the lower end is situated near the apical one-third of cell 1st M2. Vein Cu1 + 1st A is about three-fourths as long as the attenuated portion of the cubital cell. *Abdomen :* Predominantly rufous, the first tergum is broadly blackened on the sides and discolored with brown on the median portion. The second has a band of brown to black extending from near the sides across the median part of the segment, this is less distinct in the submedian portions. The third tergum is largely rufous, is black on the sides and has a narrow band of black extending across the median portion. The other terga are entirely rufous except for a narrow longitudinal black vitta extending down the middle of the fifth. Ovipositor rather elongate, the basal portion, *in situ*, is approximately equal in length to segments three to five.

Length : Wing, 8·4 mm.

Dacus addens Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 149.

The type female is in good condition, it is labeled " Celebes, *A. R. Wallace*, B.M. 1858–142 ".

This is an otitid and is the type of the genus *Conicipithea* Hendel, 1914, *Abh. Zool.-Bot. Ges. Wien*, **8** (**1**) : 29. Refer to Hendel for a discussion of this species.

Dacus areolatus Walker

(Pl. 11, fig. 3)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 295.

The type female is in good condition, it is labeled " Batchian, *A. R. Wallace* 68–4 ". This is a *Dacus* (*Paradacus*) Perkins, very distinct from all known species. It is closest to *D. perplexus* Walker but is smaller, lacks the median yellow vitta on the thorax ; the wings are quite differently marked ; the costal cells are clear and the wing apex is fumose through cell R5 (Pl. 11, fig. 3) ; the yellow mark on each mesopleuron also does not extend to the humerus.

Descriptive Notes on the Type

Head: Front yellow, discolored with brown in the middle and with a large brown spot at the base of each bristle. Two pairs of inferior fronto-orbitals are present. The face has two pairs of brown spots, two moderately large, oval spots in the usual positions in the antennal furrows and two small spots in the upper portion of the furrows just below the antennae. Antenna entirely yellow, the third segment just slightly longer than the face. *Thorax:* Predominantly reddish brown with a pair of broad, postsutural yellow stripes extending just beyond the inner alar bristle. That portion of thorax between humeri and notopleura reddish brown. Scutellum yellow with a narrow black band across the base. *Wings :* Predominantly brown fumose. The first costal cell, basal half of second costal cell, the first basal cell, and

cell M, are hyaline. Cell M has a small brown area covered with microtrichia at the lower apical portion. The basal two-fifths of cell 1st M2 is hyaline. M2 also has a moderately small hyaline spot on the upper portion just beyond the r-m crossvein ; directly in line with this, above, cell R5 has a rather elongate hyaline spot. The apical portions of cell 2nd M2 and cell M4 are hyaline. The posterior lobes of the wing are also hyaline. The first costal cell is entirely bare, the second has microtrichia in about the apical half (refer to Pl. 11, fig. 3). The abdomen is entirely rufous. The basal segment of the ovipositor is very elongate and tubular, it is longer than the remainder of the abdomen as seen *in situ*. The base of the ovipositor is parallel sided, it is as broad at base as at apex.

Length : Body, 6·8 mm.; basal segment of ovipositor, 3·5 mm.

Dacus basalis Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1072.

The type male is in the collection under the genus *Plagiostenopterina* Hendel (" Ortalidae "—Otitidae). The type is labeled " Australia, Northern Terr., Port Essington, B.M. 1842–1 ". It is in fair condition, the parts are intact except for lacking one middle leg ; the body is covered with a light film of fungus.

The species is listed under the combination *Plagiostenopterina basalis* (Walker) by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 49, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 64).

Dacus biarcuatus Walker

(Pl. 11, fig. 4)

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 122.

The type male labeled " New Guinea, *W. W. Saunders*, B.M. 1868–4 " is in fair condition except that one wing is missing. This is a *Dacus* (*Strumeta*) Walker, and appears to be on the borderline between *Strumeta* and *Neodacus*. It has a pair of small prescutellar bristles, but these are much more poorly developed than is normal for *Strumeta*. It more closely resembles *Dacus* (*Neodacus*) *curvifer* Walker than any known *Strumeta*. The wing markings are quite similar (Pl. 11, fig. 4). It is separated by the presence of the prescutellar bristles. The postsutural yellow stripes are also very short, ending halfway between the anterior and posterior supraalar bristles. The mesopleural stripe is more narrow and does not extend along the entire upper margin of the mesopleuron. The femora are dark colored (brownish) on the apical halves and the species is also smaller in size.

Descriptive Notes Based on the Type

Head : Front about one-half longer than wide, chiefly yellow with a brown spot at the lower median portion which has an extended arm reaching up to the upper inferior fronto-orbital bristle and another arm reaching to the lower inferior fronto-orbital bristle. The superior fronto-orbitals each have a large brown spot surrounding the base, these extend almost to the middle line of the front. Face with a pair of large, round, black spots. First antennal segment entirely yellow, rather elongate,

almost equal in length to the second segment. The third segment is long and slender, approximately five times longer than wide and considerably longer than the face. *Thorax :* Mesonotum entirely black, faintly grayish pollinose with no distinct black or gray vittae. The postsutural yellow vittae are abbreviated and extend only about halfway from the suture to the hind margin of the mesonotum. The upper front corners of the humeri are brown ; the remainder is yellow. The yellow vertical stripe on the mesopleuron is rather narrow, it extends over approximately half the width of the segment and ends at the lower portion of the mesopleuron, not extending to the sternopleuron. Scutellum yellow with a rather broad, black band across the base, this is somewhat expanded in the median portion. From a direct dorsal view the black mark at the base extends almost one-third the length of the scutellum. *Wings :* Chiefly dark brown fumose. The costal cells are densely covered with microtrichia ; the markings are as in Pl. 11, fig. 4. *Legs :* Femora chiefly brown. The front and middle pairs are yellow at their bases and apices. The hind pair is yellow at the base. The hind tibia is entirely brown. The middle is brown on the basal half. The front tibia is tinged with brown on the under portion at the base. The tarsi are entirely yellow. *Abdomen :* All black except for a reddish tinge at the apex of the second tergum and except for the rufous colored conjunctiva of the venter.

Length : Wing, 7·0 mm.

Dacus bicolor Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1071.

The type male is in fair condition, the specimen contains no locality nor collector label. This is an otitid and is in the collection under the genus *Icteracantha* Hendel. A notation is on the label to the effect that the species is a synonym of *chalybeiventris* (Wiedemann) and that *Scelacanthina* Enderlein is a synonym of *Icteracantha.*

Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae,* p. 55, and 1914, *Abh. K. K. Zool-Bot. Ges. Wien,* **8** (**1**) : 87) lists *bicolor* in synonymy with *I. chalybeiventris.*

Dacus bilineatus Walker

(Pl. 11, fig. 5)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 150.

Type female present in collection labeled " Celebes, Makassar, *W. W. Saunders,* B.M. 1868–4 ". The type is in rather poor condition, the abdomen and the apex of one wing are broken. This is a Trypetinae belonging to the genus *Dimeringophrys* Enderlein (1911, *Zool. Jahr.* **13** (**3**) : 452). *D. ortalina* Enderlein, the type of the genus (from Sumatra), is a new synonym of *D. bilineatus* (Walker).

The genus is characterized from other Trypetinae with four scutellar bristles by having just one pair of orbital bristles. It fits near *Euphranta* Loew and related genera by having the pleurotergite haired. The reduced chaetotaxy and the elongate third antennal segment would place this near the borderline of the tribe Adramini under the subfamily Dacinae and in Hering's key (1941, *Siruna Seva,* **3** : 4) it would run to *Pseudosophira* Malloch but the bristles of the front are quite different, the

pleurotergite is haired, vein R2 + 3 is straight and the cubital cell is distinctly pointed below (Pl. 11, fig. 5).

Descriptive Notes on the Species

Head : Front about one-third longer than wide, measured from the lunule to the lower ocellus, and possessing just one pair of orbital bristles ; these are situated close to the anterior margin and are directed inward. The face is very gently concave and has a distinct moon-shaped groove across the median portion. The face and antennae are entirely yellow with no dark marks. The third antennal segment is elongate, three to four times longer than wide and rounded at the apex. The arista is moderately long plumose, the longest hairs are slightly longer than the width of the third segment. The palpi are yellow and are broad and rounded with rather numerous short, black hairs along the apex and the ventral margin ; the palpi are about one-half broader than the third antennal segment. The genae are narrow, not equal in width to the palpi. *Thorax :* Mesonotum about one-half longer than wide, predominantly rufous with a dark brown to black stripe extending down each submedian margin, just inside each humerus from the front to the hind margin. The median portion and the sides are rufous. The scutellum is entirely yellow. The humeri and notopleural calli are yellow, the humeral bristles are well developed. The pleura are chiefly brown to black. The upper hind corner of each mesopleuron is yellow. The notopleura are entirely black. I see no evidence of prescutellar bristles on the type and a very weak pair of dorsocentrals is developed. These are situated slightly in front of a line drawn between the posterior supraalar bristles. There are four strong scutellar bristles developed. *Legs :* The coxae are dark brown to black. The front femora are brown on the apices and bases, yellow in the middle. The middle femora and hind femora are brown on the bases and yellow on the apical halves. The tibiae are all brown to black. The tarsi are yellow to rufous with brown apical subsegments. The single spur at the apex of the middle tibia extends slightly over one-third the length of the basitarsus. *Wings :* As in Pl. 11, fig. 5. Predominantly hyaline but with distinct yellow fumosity along the costa, in basal cells, and over the m crossvein. The first costal section is hyaline, the second is light yellow fumose and is densely covered with microtrichia. The cubital cell has a moderately acute lobe at its lower apex, this is slightly longer than the vertical section of Cu1. The r-m crossvein is situated at the apical three-fifths of cell 1st M2. Vein R1 is entirely setulose, the setae extend over vein R below the humeral crossvein. Vein R4 + 5 is setulose well beyond the r-m crossvein.

Length : Wing, 7·0–8·0 mm.

Dacus brevistriga Walker

1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 322.

The type was not designated in the collection but a female specimen labeled " South Africa, Natal, *W. W. Saunders, B.M.* 1868–4 " is apparently the type. It is in fairly good condition except for the presence of some debris on the body and for the loss of some of the bristles.

The type is a *Dacus* (*Daculus*) and does not seem to conform to the concepts of this species which I have seen in the literature. Bezzi (1924, *Bull. Ent. Res.* **15** (**1**) : 86) treated it in his key under his category " species of greater size ", with a broad costal band or large apical spot in the wing ; it would better fit in his group of smaller species with a rather narrow costal band and seems to fit *Dacus katonae* Bezzi (*loc. cit.*) amended to *katonai* by Munro (1935, *Ann. Mus. Nat. Hung.* **29** : 134, fig. 2). The Walker specimen in the collection fits Munro's figure of *katonae*. I cannot be sure of this synonymy since I have not had an opportunity to study enough material. Munro (1930, *Bull. Ent. Res.* **20** (4) : 392, and 1957, *Brit. Mus. Ruwenzori Exped.* **2** (**9**) : 860) places *D. asclepiadens* Bezzi as a synonym of *brevistriga*.

Length : Body, 6·0 mm.

Dacus concisus Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 252.

The type female is in rather poor condition, one wing being missing and the other is broken off before the apex, also the specimen is covered with debris. It is labeled " Dor, 68·4 ", evidently for Dorey, New Guinea.

This species belongs to the genus *Diplochorda* Osten Sacken and is in the collection under the family " Ortalidae " (Otitidae). This genus has been placed in the family Phytalmiidae by most authors. Hering (1941, *Siruna Seva*, **3** : 3) places *Diplochorda* in the tribe Phytalmiini under the subfamily Dacinae, " Trypetidae " (Tephritidae). Hennig (1940, *Arb. über Morph. und Tax. Ent.* **7** (**1**) : 60) indicates that *Diplochorda* and related genera fit best into the fruit fly family (Tephritidae). Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**1–2**) : 169, and 1940, *Ann. Mag. Nat. Hist. ser. II*, **6** : 88) treated the Phytalmiinae and the Angitulinae (or Phytalmiini and Angitulini, if these were treated as tribes under Tephritidae and Otitidae respectively) under the family Phytalmiidae although he admitted that the group is obviously " composite in nature " and " is a difficult one to place in our present system of classification, possessing as it does several confusing characters ". He points out that the various genera possess characters which are borderline between the two families and which weaken the value of the characters used for separating them. Steyskal (1950, *Wasmann Jour. Biol.* **8** (**1**) : 93) says he believes " it unwise to abandon the family Phytalmiidae until more is known about the biology of its members, the forms involved and its nearest relatives ". I am following Hering in considering *Diplochorda* in the tribe Phytalmiini under the Dacinae.

Dacus turgidus Walker (1865, *Jour. Linn. Soc. Lond.* **8** : 134) is a synonym. This synonymy was recorded by Osten Sacken (1881, *Ann. Mus. Civ. Stor. Nat. Genova*, **16** : 487).

Dacus conformis Walker

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 34.

No type had been designated but a female specimen, in good condition, labeled " *conformis* " in Walker's handwriting is apparently the type. It is from " Singapore, *W. W. Saunders*, B.M. 1868–4 ".

This is the type of Walker's genus *Strumeta*, which I treat as a subgenus of *Dacus* (see Hardy, 1955, *Ann. Ent. Soc. Amer.* **48** (**6**) : 436) and is a synonym of *Dacus* (*Strumeta*) *umbrosus* Fabricius (see Hardy & Adachi, 1954, *Pac. Sci.* **8** (**2**) : 184).

Dacus contrahens Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 151.

The type male is in good condition except that the front margin of one wing is partly broken. It is labeled " Celebes, Macassar, *W. W. Saunders*, B.M. 1868–4 ". This is an Otitidae belonging in the genus *Pseudepicausta* Hendel. It is treated under this combination by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64).

Dacus curvifer Walker

(Pl. 11, fig. 6)

1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 229.

The type male is in good condition, it is labeled " Waigiou, A. R. Wallace. 68–4 ". Walker had indicated a female specimen in his description.

This is a *Dacus* (*Neodacus*) Perkins and has been adequately described in my revision of this subgenus (Hardy, 1954, *Proc. Ent. Soc. Wash.* **56** (**1**) : 8). *Dacus speculifer* Walker (1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 122) is a new synonym.

I find considerable variation in the wing maculation in this species. Some specimens have a continuous hyaline mark extending from the wing margin at apex of cell 2nd M2, through cell R5 to vein R4 + 5 ; the type of *curvifer* is this way. Some also have a continuous hyaline streak extending from the wing margin at lower portion of cell M4 up through cell 1st M2, near base ; through cell R to vein R4 + 5 below the r–m crossvein. Also a hyaline mark sometimes extends from vein R4 + 5 obliquely through cell 1st M2, ending at vein M3 + 4 at about the apical one-third of the cell ; this is also the case in the type of *curvifer* (Pl. 11, fig. 6). The markings show definite intergradation between this pattern and the wing which I figured (*loc. cit.*) ; the type of *D. speculifer* Walker fits my drawing of *curvifer*.

Dacus determinatus Walker

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.

The type male is in poor condition, and the wings are missing. It is labeled " Sarawak, Borneo, A. R. Wallace, ex coll. *Saunders*, 68.4 ". This belongs in the genus *Adrama* and the species is apparently widely distributed. A large series of specimens are in the British Museum collection and in the University of Hawaii collection from Borneo, Java, Philippine Islands, Malaya, Thailand, Burma, Ceylon, and India.

Adrama austeni Hendel, 1912, *Wien. Ent. Zeit.* **31** : 12, is a new synonym ; based upon the comparison of the types of both in the British Museum collection.

This species is closely related to *A. selecta* Walker but is distinguished by having the propleura and sternum of the thorax largely polished black, rather than entirely rufous and the face with a single broad black spot above the epistoma, rather than with two black spots. The apical portion of the wing beyond a level of the m crossvein is brown and a transverse brown band extends through the r-m crossvein.

Length : Wing, 8·0 mm.

Dacus detrudens Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 135.

A specimen in the collection, sex unknown, is labeled " ? type ". It is in poor condition, the abdomen is broken off and only one antenna, one front leg, one middle leg and no hind legs are present. The pin contains a handwritten label " *detrudens* " plus " East Indies, Misol, *W. W. Saunders*, B.M. 1868–4 ". This is in the collection under the genus *Pseudepicausta* (Otitidae). It is also treated under this combination by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64).

This specimen from Misol is apparently Walker's type although his specimen was supposed to be from the Island of Salwatty, New Guinea. The Misol specimen does not fit the original description, the face is all yellow, with no black band near the epistoma ; the wings have a brown band extending longitudinally from base to r-m crossvein and the antennae are yellow, not " piceous ". A male specimen in the collection under *Dacus detrudens* labeled " Sumatra, *W. W. Saunders*, B.M. 1868–4 " is more nearly like Walker's description ; it seems to fit in all respects except that the head is missing so I was unable to check these characters.

Dacus devius Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 250.

Both of Walker's specimens, a male and a female, are present and both are labeled " type ". The male was the first mentioned and should be the type, it is labeled " N. Guinea, Dorey, B.M. 68.4 ". The allotype female is labeled " Dory 59–58 ". They both are in good condition except that the female is covered with debris.

This is in the collection under the genus *Antineura* Osten Sacken (Otitidae). Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 41, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 36) lists it as *Antineura devia* (Walker).

Dacus diffusus Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 153.

Two specimens are in the collection under this name, neither is marked type. They are labeled " Celebes, nr. Macassar, *A. R. Wallace*, B.M. 1858–142 ". One is a female and was probably the specimen discussed by Walker ; it is in very poor condition, the head and abdomen are missing. The other specimen, a male, is in

fair condition, one wing is gone and the specimen is obviously teneral. I have designated this specimen as a lectotype.

These are teneral (almost completely pale) specimens of *Dacus* (*Strumeta*) *umbrosus* Fabricius. This is a new synonym.

Dacus discipennis Walker

(Pl. 11, fig. 7)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 294.

Walker indicated a female in the description but the unique specimen in the British Museum is a male labeled " Moluccas, Bachan, *W. W. Saunders*, B.M. 1868–4 ". It is also labeled " *discipennis* ", apparently by Walker and is probably the type.

This is a *Dacus* (*Daculus*) Speiser, looking more like *Neodacus* (but there is no evidence of anterior supraalar bristles) than any of the *Daculus* brown to me. It is very characteristic because of the wing markings, almost all brown with a hyaline longitudinal streak through the center (Pl. 11, fig. 7) ; also because of the yellow coloring of the humerus being continuous with that of the notopleuron. *Head :* The front is entirely yellow, about one-half longer than wide and with three weak inferior fronto-orbital bristles present, the lower pair is rudimentary. The swollen portion of the front is not discolored and there is no discoloration at the bases of the bristles. The face is yellow with rather large, oval black spots in the antennal furrows. Antennae yellow, the third segment is slightly longer than the face. Occiput entirely yellow. *Thorax :* Mesonotum chiefly black with broad yellow vittae on the sides, the lateral margins are completely yellow to rufous, the portion between the humerus and the notopleural callus is yellow. The scutellum is yellow with a narrow black base. *Wings :* The first two costal cells are densely covered with microtrichia and are yellow-brown fumose, as is the remainder of the anterior portion of the wing. Wing with a longitudinal hyaline streak extending through the median portion from the base of cell M to the m crossvein (Pl. 11, fig. 7). *Abdomen :* Chiefly brownish red. The second tergum is yellow on the apical one-fourth to one-third. The fourth tergum has an indistinct yellow marking in the median posterior portion and the apex of the fifth tergum is yellow. The sides of the abdomen are gently rounded so that the ventral portion is concave. The sterna are contained within a rather deep concavity.

Length : Wing, 8·8 mm.

This species has been discussed by Hardy & Adachi (1954, *Pac. Sci.* **8**(**2**) : 153).

Dacus divergens Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 149.

The type male is in good condition, it is labeled " Celebes, nr. Macassar, coll. *A. R. Wallace*, B.M. 1858–142 ".

This is an Otitidae, in the collection under the genus *Philocompus* Osten Sacken. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 42, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 31) lists it under this combination.

Dacus emittens Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 152.

No type has been designated. Six specimens are in collection under this name labeled " Celebes nr. Macassar, *A. R. Wallace*, B. M. 1858–142 ". A female specimen labeled by Walker and fitting his description is probably the type. Of the six specimens only four are *emittens*, a female specimen of *D.* (*Strumeta*) *cucurbitae* Coquillett is in the series. Another male in the series appears to be *D.* (*Strumeta*) *bryoniae* Tryon (these specimens are the so-called varieties which Walker mentioned).

This large species is a *Dacus* (*Zeugodacus*) Hendel and is readily recognized by its wing coloration. The broad costal band extends through all of cell R3 and expands at the apex into a large brown spot which fills all of the apex of the wing, except for the margin in the middle of cell 2nd M2. The band extends continuously across the m-cu crossvein through cell M4 almost to the cubital streak. The body color is chiefly rufous, the mesonotum has three postsutural yellow stripes. The basal segment of the ovipositor, *in situ*, is slightly longer than segments four and five combined.

Length : Wing, 9·0 mm.

The species has been described and figured by Hardy & Adachi (1954, *Pac. Sci.* **8** (**1**) : 187–188).

Dacus exigens Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 151.

The type male is in poor condition, the abdomen, one middle leg and one antenna are broken off and the face is covered with debris. It is labeled " Celebes, Macassar, *W. W. Saunders*, B.M. 1868–4 ".

It is an Otitidae, in the British Museum collection under the genus *Pseudepicausta* Hendel. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64) treats it under this name.

Dacus expandens Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 114.

The type is a male, in good condition, labeled " Borneo, Aru Is. *W. W. Saunders*, B.M. 1868–4 ". Walker's original description indicated that he had a female specimen.

This is a *Dacus* (*Paratridacus*) Shiraki and the species has been adequately described and figured (Hardy, 1951, *Pac. Sci.* **5** (**2**) : 140–141).

Dacus expertus Walker

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 14.

The type female is in very poor condition, the only part intact is one wing, one hind leg is present except for the apex of the tarsus ; the abdomen is gone and the

thorax is almost so—only a shell remains on one side. The head is present but is covered with debris and the antennae are present but the aristae are broken off. The specimen is labeled " East Indies, Gilolo, *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae and is in the collection under the genus *Pseudepicausta* Hendel. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64) lists it under this name.

Dacus figuratus Walker

(Pl. 11, fig. 8)

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.

The type female is labeled " Borneo ", no collector or date is given. The specimen is in very poor condition, the head is missing, the wings have been broken off and are glued on a card, the legs and other characters are somewhat obscured by the way the specimen is mounted.

I am unable definitely to place this to genus, it is a Trypetinae, very probably belonging to the genus *Euphranta* Loew, at least it appears to be a Euphrantini. The pleuroterga are covered with fine erect hairs. A weak sternopleural bristle is present, this is rudimentary and is pale in color. If one considers the sternopleural as lacking the specimen would seem to fit near *Xanthotrypeta* Malloch ; it is quite a different species, however, than the genotype (*bimaculata* Malloch). It could also possibly fit near *Cyclopsia* Malloch ; it is quite distinct, however, from the genotype (*inaequalis* Malloch).

Descriptive Notes on the Type

Thorax : Almost entirely shining black on the dorsum with a broad yellow mark on the median hind portion, covering the area between the dorsocentral bristles, narrowing in the middle and extending anteriorly about three-fifths the distance to the suture. The median portion of the mesonotum has a broad gray fascia extending the entire length, the sutures are also gray. The scutellum has four strong bristles and is entirely yellow, except for its extreme base and except for the basal margins, on the sides. The metanotum is all black ; the humeri and notopleural calli, except for the lower edges, are yellow ; the lower portion of each notopleural callus is black. The pleura are polished black, except for the yellow propleura. Except for the yellow upper margin of each mesopleuron the yellow coloration is continuous with that of the humerus and is expanded on the posterior portion to cover almost half the length of the mesopleuron. A narrow longitudinal, yellow vitta extends across the top border of each sternopleuron and continues on into the yellow of the propleuron. *Legs :* Predominantly rufous, the middle and hind tibiae and tarsi are brown to black. *Wings :* As in Pl. 11, fig. 8. The apical portion is dark brown fumose ; the anterior portion of the wing, from the subcostal vein to the brown apical mark, is intensely yellow fumose, this fumosity extends across the wing over the r-m crossvein fading out in cell 1st M2 (Pl. 11, fig. 8). Vein R1 is setulose throughout its length, the setae extend down the node a short distance beyond the humeral crossvein. Only the basal portion of vein R4 + 5 is setulose, the setae extend about two-fifths

to half the distance to the r-m crossvein ; there may be a few scattered setae beyond this point and the r-m. The stem of Rs is bare. Vein R2 + 3 is straight or nearly so. The cubital cell has a short, acute lobe at the lower apex, approximately equal to the length of the vertical portion of Cu1 (Pl. 11, fig. 8).

Length : Wing, 6·0 mm.

Dacus fulvitarsis Walker

(Pl. 11, fig. 9)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 153.

No specimen can be found in collection labeled *fulvitarsis* and it is not in the card file. A specimen is in collection, however, labeled *D. pallitarsis* Walker " Celebes, Macassar, *W. W. Saunders*, B.M. 1868–4 ", which fits Walker's description of *fulvitarsis*. I can find no reference to a *pallitarsis* being described and feel that this is Walker's type of *fulvitarsis*. It is in rather poor condition, the antennae, hind legs and apical half of the abdomen are gone and the body is covered with considerable debris. This is a chloropid, genus? I cannot find it represented in the B.M. collection. It is almost entirely subshining black, the middle legs have the basal two tarsal segments yellow and the bases of the femora yellow. The bases of the front femora are faintly yellowish. The legs are otherwise black (the hind legs are missing). The front is subshining black, the face and occiput are conspicuously white pubescent. The wings seem to be characteristic (see Pl. 11, fig. 9) ; they are slightly fumose in the apical portion and over the m crossvein.

Dacus furcifer Walker

(Pl. 12, figs. 10*a–c*)

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 14.

One male specimen in the collection is labeled " East Indies, Gilolo, *W. W. Saunders*, B.M. 1868–4 ", with Walker's label "*furcifer*" and is probably the type but it is not labeled as such. It is in good condition except for some debris scattered over the body.

This is a borderline species fitting between Euphrantini and Adramini. I consider it to be a Trypetinae related to the genus *Euphranta* Loew and under this genus it would fit in the subgenus *Staurella* Bezzi by the presence of prescutellar bristles. *D. furcifer* would seem to fit *Adrama* Walker almost as closely as *Euphranta* except for the presence of moderately weak dorsocentral and prescutellar bristles, also by having only the front femora spinose (Pl. 12, fig. 10*b*) and the base of R not setulose much below the humeral crossvein. This apparently represents a new genus and I am proposing the name *Paraeuphranta*. *Paraeuphranta* is distinguished from all *Euphranta* known to me by having the front femora spinose beneath ; by having three pairs of inferior fronto-orbital bristles almost evenly spaced, the upper pair is approximately the same distance from the lower superior fronto-orbital as from

the second pair of inferior fronto-orbitals. In *Euphranta* two or three pairs of inferior fronto-orbitals may be present ; when the latter is the case the lower two pairs are situated closer together with the upper widely spaced and near the superior fronto-orbitals (Pl. 12, fig. 10*c*). In *Paraeuphranta* the thorax, from dorsal view, is more elongate and narrow ; the width (measured at the humeri) is less than half the length, including the scutellum ; the proportions are 2 to 4·5. *Euphranta* have a more broad thorax, distinctly less than two times longer than wide ; the proportions are 2 to 3·5.

The resemblance of *Paraeuphranta furcifer* to *Euphranta* (*Euphranta*) *striatella* (van der Wulp)—new combination—is most striking. (*Note : striatella* was described as a *Lagarosia* van der Wulp, 1891, *Tijd. v. Ent.* **34** : 213, pl. 12, fig. 14. This was synonymyzed with *Euphranta* by Malloch, 1939, *Ann. Mag. Nat. Hist.* **4** (**11**) : 251. *Euphranta nigra* Enderlein, 1911 *Zool. Jahrb.* **31** : 440, fig. *q* is a new synonym of *E. striatella*, based upon the examination of specimens in the British Museum and by comparison of the original descriptions.) On the basis of wing venation there is very little difference between these. The costal band, however, in *furcifer* is broader at the wing apex, from end of R2 + 3 to about middle of cell R5 it is as broad as the oblique band from near apex of R2 + 3 to apex of M1 + 2 (Pl. 12, fig. 10*a*). Enderlein shows no apical band on his drawing of the wing of *nigra*. In the specimen of *nigra*. in the British Museum collection a very narrow band is present along the costa, extending approximately to the middle of cell R5. Enderlein states that his species is very close to van der Wulp's from Java but Enderlein presumed that *Lagarosis striatella* was an Otitidae.

Notes Based Upon the Type

Head : Front about two times longer than wide and possessing three pairs of inferior fronto-orbitals and one pair of superior fronto-orbitals (Pl. 00, fig. 10*c*). The front is entirely brown and the face is yellow with no markings ; it is concave in profile, with a rather marked transverse furrow across the median portion ; the lower margin is strongly produced so that the width of the face, measured at the epistomal margin, is approximately equal to the broadest portion of the occiput as seen in direct lateral view. The antennae are reddish brown, the third segment is rather slender, is three to three and one-half times longer than wide and extends slightly more than half the length of the face. The aristae are rather long plumose, the longest hairs are slightly greater than the width of the third antennal segment. The palpi are yellow-brown, slightly broader than the third antennal segment and are covered with short, black bristles on the ventral portion. *Thorax :* Subopaque brown, tinged with yellow on the humeri, propleura, and margins of scutellum, with gray pubescence on the sides of the mesonotum and along the suture. The presutural bristle is absent and the humeral bristles are well developed. The pteropleural bristle is present but is not as well developed as are the sternopleural and the mesopleural bristles. The pleurotergite is covered with fine, white hair. The scutellum has four strong bristles, the dorsal surface is thickly covered with short, recumbent black setae. The halteres are yellow-white. *Legs :* Dark brown to black. The front femora are slightly thickened and have four rather strong stout bristles

or spines on the underside at apical one-third to two-fifths (Pl. 12, fig. 10*b*) ; other femora without strong bristles. Middle tibia with a single strong apical spur. *Wings :* As in Pl. 12, fig. 10*a*. Vein R1 is setulose throughout its length. The setulae extend down the stem of R well below the humeral crossvein. Vein R4 + 5 is setulose only to the fork of R2 + 3. The radial sector is bare. Vein R2 + 3 is slightly undulated. The r-m crossvein is situated near the apical fourth of cell 1st M2. The cubital cell has a short, acute point at lower apex, the length of this lobe is much less than the length of the vertical portion of vein Cu1 (Pl. 12, fig. 10*a*). *Abdomen :* Entirely dark brown to black, long and slender ; all of the terga are distinctly longer than wide. The abdomen is equal in length to the combined head and thorax.

Length : Wing, 8·4 mm.

Dacus imitans Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 150.

The type female is in the collection under the genus *Plagiostenopterina* Hendel (" Ortalidae "—Otitidae). It is labeled " Celebes, Macassar, *A. R. Wallace*, B.M. 1858–142 " and is in fair condition except for lacking the abdomen.

The species is listed under the combination *Plagiostenopterina imitans* (Walker) by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 49).

Dacus inaptus Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 151.

A specimen in the collection (sex?) is not labeled type but is apparently one of the specimens mentioned by Walker (he indicated a male and a female). It is labeled " Celebes, Macassar, *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae obviously belonging in the genus *Plagiostenopterina* Hendel. This is a new combination, Hendel did not treat this species in his 1914, *Gen. Ins.* 157. The species is closely related to *P. enderleini* Hendel (series in British Museum from the Solomon Islands and Papua) but differs by having vein R2 + 3 undulated and the first costal cell hyaline. In *enderleini* vein R2 + 3 is straight and the first costal cell is brown fumose. It also closely resembles *P. aenea* (Wiedmann) but the undulated vein R2 + 3 characterizes it. This character may be of generic importance, I found nothing else like this in the British Museum collection.

Dacus incisus Walker

1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 323.

The type male is in poor condition although the specimen is fully hardened and the coloration is good. A portion of the thorax has been damaged by the pin and the two middle legs and one hind leg are missing. The type is labeled " Burma, ex coll. *W. W. Saunders*, 68–4 ".

This is a *Dacus* (*Strumeta*) Walker. It is in the collection under the name *Chaetodacus ferrugineus* var. *incisus* and has been rather commonly treated in the literature as a possible synonym of *D. dorsalis* Hendel. *D. incisus* proves to be quite distinct from *dorsalis* and is also distinct from the species which I had previously considered to be *incisus* Walker. *D. incisus* actually fits closer to *D. nigrotibialis* (Perkins), from Malaya, because of the predominantly black femora : the front femora are all black (the middle legs are missing) and the hind femora are black on the apical third. It differs from *nigrotibialis* by having a black band across the middle of the face connecting the lateral spots ; by the much narrower costal band in the wing as well as in a number of other details.

Descriptive Notes on the Type

Head : The front is about one-half longer than wide ; two pairs of inferior fronto-orbital bristles are present. The vertex has a black band extending transversely between the upper inner margins of the eyes, through the upper ocelli. *Thorax :* The mesonotum is almost entirely subopaque black, the lateral yellow vittae are broad and extend to the hind margin of the mesonotum. The scutellum is entirely yellow except for a very narrow black base. The yellow mark on each mesopleuron is separated from the yellow of the humerus by just a narrow black streak. *Wings :* The first and second costal cells are entirely hyaline ; the second has microtrichia in the extreme apex. The costal band is very narrow, it does not extend into cell R3 except at the wing margin. The cubital streak is broad. *Abdomen :* The first tergum has a narrow band of black across its base and is otherwise yellow. The second tergum is chiefly yellow with a narrow basal black band, expanded in the middle, which extends about two-thirds the length of the segment down the middle line. Terga three and four are entirely dark brown to black. Tergum five is black at its base and has a narrow black vitta extending longitudinally down the middle. The shining areas are rufous, tinged lightly with brown.

Length : Wing, 5·2 mm.; body, 6·0 mm.

Dacus inscriptus Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 162.

Walker's original description indicated that he had a female specimen. A unique specimen in the collection with a handwritten label " *inscriptus* " is a male. It is also labeled " Borneo, Ambong ". Walker's type was supposed to be from Amboyna. The specimen is in fair condition except that the antennae, mouthparts and head bristles are lost. The specimen fits Walker's description.

This is a Trypetinae belonging in the tribe *Euphrantini* and the genus *Cyclopsia* Malloch. The type of this genus *C. inaequalis* Malloch is a new synonym of *C. inscripta* (Walker).

This genus is almost borderline between the Euphrantini and the Adramini.

Dacus instabilis Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 250.

Walker indicated a female in his description but the unique specimen in the collection, containing a handwritten label "*instabilis*", is a male. It is also labeled "New Guinea, Dory, *W. W. Saunders*, B.M. 1868–4". I believe this specimen is the type.

This is an Otitidae belonging in the genus *Lamprogaster* Macquart. *L. gracilis* Hendel is a new synonym of *L. instabilis* (Walker), based upon a comparison of specimens in the British Museum collection.

Dacus lateralis Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 123.

Walker indicated a male specimen in his description but the specimen under this name in the collection is a female. It is labeled "New Guinea, *W. W. Saunders*, B.M. 1868–4". This is probably the type. The specimen is in fair condition, the antennae are gone and some fungus is scattered over the body.

This is a Trypetinae belonging in the genus *Clusiosoma* Malloch. *C. biseriata* Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 426) is a new synonym, based upon the comparison of specimens in the British Museum collection.

Dacus latifascia Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 114.

The type female is in fair condition except that one wing has been broken off and the other is folded over in the posterior region. It is labeled "Aru Is., *A. R. Wallace*, ex *Saunders* Coll. 68.4".

This is an Otitidae and is in the collection under the genus *Cleitamia* Macquart. I am treating it under this combination. Bezzi (1913, *Mem. Ind. Mus.* **3** : 74) said this species was "an Ortalid belonging to *Xiria*, according to Prof. Hendel" Hendel (1914, *Gen. Ins.* 157) did not list the species under *Cleitamia* or *Xiria*.

Dacus lativentris Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 115.

The type was not designated but evidently is the female specimen which is labeled "*lativentris*, Borneo, Aru Island, *W. W. Saunders*, B.M. 1868–4". The specimen is in poor condition, the abdomen and middle and hind legs are missing.

This is an Otitidae and has not been identified in the British Museum collection. It is a *Plagiostenopterina* Hendel. I have compared this with the type and a series

of paratypes (from Papua) of *Plagiostenopterina orbitalis* Malloch and find no way of separating them. Malloch's species is a new synonym of *P. lativentris* (Walker).

Dacus lituratus Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 251.

The type female is in fair condition except that the middle legs, the aristae and the front margin of the left wing are broken off. It is labeled " New Guinea, *A. R. Wallace*, 62–91 ".

This is an Otitidae belonging to the genus *Cleitamia* Macquart. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 73, and *Abh. K. K. Zool.-Bot. Ges. Wien.* **8** (**1**) : 129 has listed it under the combination *C. liturata* (Walker)).

Dacus longivitta Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 115.

The type male is in the collection under *Plagiostenopterina* Hendel (" Ortalidae "—Otitidae). It is labeled " Aru, *W. W. Saunders*, B.M. 1868–4 " and is in poor condition, the abdomen and one wing are missing and the other wing is broken.

The species is listed under the combination *Plagiostenopterina longivitta* (Walker) by Hendel (1914, *Ger Ins.* **157**, *Dipt. Muscaridae*, p. 49).

Dacus mutilloides Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 115.

The type female is in poor condition, the abdomen is missing and only one front leg, one hind leg, one antenna and one wing are present. It is labeled " Aru I., *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae and is in the collection under *Pseudepicausta* Hendel. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 116) lists it under this genus.

Dacus? nigrilinea Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 251.

A female specimen is in the collection labeled " New Guinea, Dory, W. W. Saunders, B.M. 1868–4 ". It has not been designated but surely must be Walker's type. It is in poor condition, the parts are fairly intact except for missing one wing and one front leg but the thorax is half covered with fungus.

This is a Dacinae, belonging to the tribe Phytalmiini and to the genus *Phytalmia* Gerstaecker. I have compared *Phytalmia nigrilinea* (Walker) with the type of *P. wollastoni* Edwards (1915, *Trans. Zool. Soc. Lond.* **20** : 418, from Minika Riv., Neth. New Guinea) and Edward's species is a new synonym.

Dacus obtrudens Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 116.

The type male is in good condition, it is labeled " Aru Island, W. W. Saunders, B.M. 1868–4 ".

This is an Otitidae belonging in the genus *Pseudepicausta* Hendel. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64) has placed this into synonymy with *P. chalybea* (Doleschall) (1858, *Naturk. Tijds. v. Ned. Indie*, **17** : 125).

Dacus pectoralis Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 114.

Type female present in good condition except that the antennae are broken off. It is labeled " Borneo, Aru, *W. W. Saunders*, B.M. 1868–4 ". This is a *Dacus* (*Strumeta*) Walker.

Note : Dacus pectoralis Walker (1861) is an African species and is treated separately from Walker's Indonesian species.

Dacus ferrugineus var. *obscurata* de Meijere (1911, *Tijds. v. Ent.* **54** : 373) is probably a synonym of *D. pectoralis* (1859), based upon a comparison with de Meijere's original description. I have not had an opportunity to study the type of *obscurata*, it is supposed to be in the Zoologisch Museum, Amsterdam, but I have studied the de Meijere collection there and was unable to find the type. A female specimen labeled *obscurata* is present from Insel Enkhuizen (Pulu Njamuk Ketjil) nahe Batavia. One female specimen in the collection under *ferrugineus* seems to be labeled " Britenron (spelling?) 2–14–18 v.d. Good, Ex lambok ". This is a specimen of *D. dorsalis* Hendel.

The type of *pectoralis* (1859) seems to fit de Meijere's description of *obscurata* in all details except for size. According to the original description the body of *obscurata* is 5·5 mm. long and the wings are 5·0 mm. The measurements of Walker's type are 9·0 mm. for the body and 8·0 mm. for the wings. Other specimens which I have considered to be *pectoralis* (Hardy & Adachi, 1954, *Pac. Sci.* **8** (**2**) : 179–180) measured 7·0 mm. for the body and 6·5 mm. for the wings.

Descriptive Notes on the Type of D. pectoralis *Walker* (1859)

Head : Two pairs of inferior and one pair of superior fronto-orbital bristles are present. The black facial spots are round and moderate in size. *Thorax :* The humeri are yellow, the hind corners are faintly discolored with brown. The mesonotum is predominantly black and lightly grayish pollinose, with three very faint, lightly shining, longitudinal vittae. No distinct yellow vittae are present but the areas normally occupied by the vittae are tinged slightly with red giving indication of slight narrow vittae (not readily visible except in certain lights). It may be that the vittae have been obscured by discoloration in the type. The scutellum is yellow with a narrow black band across its base. *Legs :* Front and hind femora yellow on

basal portions and brownish at apices ; the middle femora are chiefly brownish red. The front and middle tibiae are yellow above and brownish below ; hind tibiae chiefly brownish. The tarsi are yellow-white. *Wings :* Costal cells yellow-brown fumose and covered with microtrichia. Costal band rather broad, extending almost to vein R4 + 5 except at the apex and base of cell R3. The cubital streak is broad and vein Cu1 + 1st A is about three-fourths as long as the attenuated portion of cell Cu. *Abdomen :* Predominantly black, reddish brown at apices of segments. The shining spots on the fifth tergum are brownish black. The basal segment of the ovipositor, *in situ*, is approximately equal in length to the fifth abdominal segment.

Dacus pectoralis Walker

1861, *Trans. Ent. Soc. Lond. n.s.* **5** : 322.

I apparently overlooked the type of this African species. According to Munro (1948, *Bull. Ent. Res.* **38** (**4**) : 620) it is a synonym of *Dacus* (*Dacus*) *bivittatus cucumarius* Sack. The name is preoccupied by *Dacus pectoralis* Walker (1859) from Indonesia.

Harold Oldroyd has confirmed that the type, from Natal, is in the British Museum collection in the series of *D. bivittatus* Bigot. He said that " it is in fairly good condition, though at some earlier time it has been attacked by pests and has a hole in the thorax and the abdomen ".

Dacus perplexus Walker

(Pl. 12, fig. 11)

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 14.

Walker indicated a female as the type of this species, the unique specimen in the collection is a male labeled " East Indies, Gilolo, *W. W. Saunders*, B.M. 1868–4 ". The handwritten label " *perplexus* " on the specimen was probably put on by Walker. The female specimen mentioned by Perkins (1939, *Univ. Queensland Pap. Dept. Biol.* **1** (**10**) : 33) in the National Museum, Melbourne, " collected by A. R. Wallace at Gilolo and labeled by Walker *Dacus implexus*, Gilolo—almost certainly this is meant to be *perplexus* "—is most probably the type.

This is a *Dacus* (*Paradacus*) related to *D. areolatus* Walker, it is readily distinguished from all known Dacinae by its unusual wing markings (Pl. 12, fig. 11). Refer to description and figures by Hardy & Adachi (1954, *Pac. Sci.* **8** (**2**) : 156).

Dacus pompiloides Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 116.

The type male is in good condition except for some fungus on the venter of the thorax. It is labeled " Aru Island, *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae belonging in the genus *Pseudepicausta* Hendel. See Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 64).

Dacus pubiseta Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 294.

The type male is in good condition except for one broken antenna. It is labeled " Moluccas, Bachan, *W. W. Saunders*, B.M. 1868–4 ".

It is an Otitidae in the collection under the genus *Antineura* Osten Sacken. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 41, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 36) has treated it in this combination.

Dacus sepedonoides Walker

1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 228.

The type male is in good condition. It is labeled " Moluccas, Ceram, *W. W. Saunders*, B.M. 1868–4 ". This was described by Walker under his treatment of the species from Waigiou Island and it has been assumed that this was the type locality.

This is an Otitidae belonging in the genus *Lamprophthalma* Portschinsky according to its placement in the British Museum collection. Hendel (1914, *Gen. Ins.* 157) did not list this species. Bezzi (1913, *Mem. Ind. Mus.* **3** : 79), *et al.* considered this to be a *Dacus*.

Dacus sepsoides Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163.

The type male is in fair condition except that the abdomen is missing. It is labeled " *Moluccas*, Amboina, *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae, in the collection under the genus *Elassogaster* Bigot. *Cephalia bicolor* Bigot and *Stenopterina unimaculatus* Kertesz are listed as synonyms. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 52, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 82) lists it under this combination.

Dacus sexmaculatus Walker

1871, *The Entomologist*, **5** : 344.

Walker described a male from Harkeko, Egypt, but I am unable to find it in the collection, also there is no card for this species in the British Museum file. I presume the type to be lost and the species is unrecognizable from the original description.

Dacus signatipes Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163.

The type male is in good condition. It is labeled " Ambona [Amboina], *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae, in the collection under the genus *Elassogaster* Bigot. Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 52) listed it under this combination.

Dacus sordidus Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 251.

The type female is in fair condition, the antennae are missing, the apical third of one wing is gone and some debris is scattered over the body. The specimen is labeled " New Guinea, Dory, *W. W. Saunders*, B.M. 1868–4 ". It had not been labeled type but contained Walker's handwritten label " *sordidus* " and is evidently the type.

This is an Otitidae, not classified in the British Museum collection. It belongs in the genus *Elassogaster* Bigot and it appears that *E. varialis* (Walker) is a new synonym. The only difference that I can see in these is that in *varialis* abdominal terga two and four are covered with short white pile while in *sordidus* the terga are covered with dark brown pile. I have not compared enough specimens to know whether or not this is of any significance.

This species was not treated by Hendel (1914, *Gen. Ins.* **157**).

Dacus speculifer Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 122.

The type male is in good condition. It is labeled " New Guinea, *A. R. Wallace*, B.M. 1862–91 ".

This is a new synonym of *Dacus* (*Neodacus*) *curvifer* Walker, see notes under that species.

Dacus squalidus Walker

(Pl. 12, fig. 12)

1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 323.

One specimen is in the collection, it has not been designated as the type but is probably one of the two (♀ and ♂) specimens reported by Walker. It is in poor condition and I cannot even determine the sex ; the abdomen, one wing and some of the legs are missing and the thorax is covered with debris. It is labeled " India, *W. W. Saunders*, B.M. 1868–4 ".

This is a Pyrgotidae, it has not been correctly placed in the collection but appears to fit close to the genus *Campylocera* Macquart. It may possibly belong to this genus, the British Museum has a number of species under *Campylocera* but all are from Africa. The wing is as in Pl. 12, fig. 12.

Dacus strigifer Walker

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 13.

The type (sex?) is in poor condition, the wings and the abdomen are missing. It is labeled " East Indies, Gilolo, *W. W. Saunders*, B.M. 1868–4 ".

It is in the collection under the genus *Antineura* Osten Sacken (Otitidae) and is treated in this combination by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 42, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 37).

Dacus strigifinis Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 295.

Walker indicated a female in his description but the unique specimen in the collection, labeled " *strigifinis* " by Walker, is a male. The pin contains the data " Moluccas, Bachan, Pres. by *Saunders*, B.M. 1868–4 ".

This is a *Dacus* (*Neodacus*) Perkins. *D.* (*Neodacus*) *lanceolatus* (Perkins) (1939, *U. Queensland Pap. Dept. Biol.* **1** (**10**) : 22) is a new synonym, based upon a comparison of the types in the British Museum collection.

Dacus terminifer Walker

(Pl. 12, fig. 13)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 152.

The type female is in rather poor condition, the abdomen and one set of legs are missing. It is labeled " Celebes, Macassar. *W. W. Saunders*, B.M. 1868–4 ".

This is a *Dacus* (*Zeugodacus*) Hendel. It is a small species characterized by the all black face and by the wing markings. No distinct costal band is present, only the stigma (cell Sc) is yellow-brown fumose and an isolated yellow-brown spot is present at the apex of vein R4 + 5 (Pl. 12, fig. 13). The yellow mark on the mesopleuron extends along the entire dorsal margin, continuous with the yellow humerus. The postsutural yellow vittae are very short and end at or slightly posterior to the anterior supraalar bristles.

Length : Wing, 4·5 mm.

Dacus trivittatus Walker

1849, *List. Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1072.

The type male is in fair condition, one wing is broken and there is some debris on the body. It is labeled " Philippine Is. purchd. fr. *Mr. Wood*, 45.49 ".

This is an Otitidae, and is in the collection under the genus *Stenopterina* Macquart. This properly belongs in the genus *Plagiostenopterina* Hendel. It has been listed

under the combination *Plagiostenopterina trivittata* (Walker) by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 49, and 1914, *K. K. Zool-Bot. Ges. Wien*, **8** (**1**) : 65).

Dacus turgidus Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 134.

The type male is in fair condition except that one wing is lacking. It is labeled only " S. 68.4 ", probably for Salwatty, New Guinea.

A synonym of *Dacus concisus* Walker, now under the combination *Diplochorda concisa* (Walker) in the subfamily Dacinae, tribe Phytalmiini.

Dacus varialis Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 123.

The type female is in good condition except that the head is gone. It is labeled " New Guinea, *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae in the collection under *Elassogaster* Bigot. It is listed under this genus by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 52). *Elassogaster varialis* (Walker) appears to be a new synonym of *E. sordidus* (Walker), see my discussion under that species.

Dasyneura caudata Walker (*nec* Fabricius)

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1073.

Two specimens are present which Walker had determined as " caudata? ". They are labeled " India, N. Bengal, *Lieut. Campbell*, B.M. 1842–25 ". They have also been labeled (evidently not by Walker) " *Dasyneura caudata* Walker " and one of them is marked " type ". This was not described as a new species by Walker, he thought he was describing *caudata* Fabricius.

These are specimens of *Dacus* (*Strumeta*) *cucurbitae* Coquillett.

Dasyneura nebulosa Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1076.

I could not find a *Dasyneura nebulosa* Walker in the collection but did find a *Dacus nebulosus* Walker. This fits Walker's vague description fairly well, as would a great share of all *Dacus* spp. A male specimen is labeled type " bred fr. follicles of *Asclepias pubescens*, Cape Colony, pupa found 26–II–1814, *W. J. Burchell*, 113 ". Two other specimens, bearing the same data, are also present. Walker's specimen of *Dasyneura nebulosa* apparently contained no locality or collector data. I am not certain that this is the specimen which Walker described, *Dacus nebulosus* may be a

nomen nudum. There is apparently no way to be sure in this case and since *Dasyneura nebulosa* is unrecognizable from the description I believe it best to consider the above specimen of *Dacus nebulosus* as the type.

I have written to Harold Oldroyd about this matter and he replied " the specimens you recorded as *Dacus nebulosa* are believed to be the type material of *Dasyneura nebulosa* Walker, 1849. According to a note in my copy of the ' List ...', this material was transferred to *Dacus* by E. E. Austen on 5.X.1904, and at the same time he entered the locality ' Cape Colony (*W. J. Burchell*) ' in the book ".

This is a new synonym of *Dacus* (*Didacus*) *fuscatus* Wiedemann (1819, *Zool. Mag.* **1** (**3**) : 28). The type, and the two specimens present, are discolored. The scutellum is reddish brown on the disc and rufous around the edge. The bright yellow margin, characteristic of most specimens of *fuscatus*, has been lost due to the discoloration. Cell 1st M2 has a slight hyaline streak through the middle in the type and is more fumose, as in typical *fuscatus*, in the other two specimens.

Dasyneura tau Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1074.

The type male is in good condition. It is labeled " China, Foochow, *G. T. Lay*, ♂, B.M. 1845–65 ".

This is a *Dacus* (*Zeugodacus*) Hendel. *Dacus hageni* de Meijere (1911, *Tijds. v. Ent.* **54** : 375) is a new synonym of *Dacus* (*Zeugodacus*) *tau* (Walker). Other names that will fall into synonymy under *tau* are as follows : *Dacus caudatus* var. *nubilus* Hendel (1912, *Suppl. Ent.* **1** : 16) ; *Zeugodacus caudatus* Perkins (*nec* Fabricius) (1938, *Proc. Roy. Soc. Queensland* **49** (**11**) : 139) ; *Zeugodacus nubilus heinrichi* Hering (1941, *Siruna Seva*, **3** : **11**) and *Zeugodacus bezzianus* Hering (1941, *Arb. uber Morph. u. Tax. Ent.* **8** (**1**) : 26). See Hardy & Adachi (1954, *Pac. Sci.* **8** (**2**) : 188–189).

The type specimen is slightly more pale than is typical for the species (it is either teneral or faded) but obviously fits within the range of variability for this species.

For a description and figures of this species refer to Hardy & Adachi *op. cit.* : 188–191.

Enicoptera arcuosa Walker

(Pl. 12, figs. 14*a–b*)

1860, *Jour Proc. Linn. Soc. Lond.* **4** : 156.

Three males and one female are in the collection labeled " Celebes, nr. Macassar, *A. R. Wallace*, B.M. 1858–142 ". None is labeled type but all are obviously cotypes and one of the males is no doubt Walker's type.

This is a Dacinae, tribe Adramini, belonging in the genus *Neosophira* Hendel (new combination). *Neosophira ferruginea* Hendel (1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 138) is a new synonym, based upon a comparison of Walker's

type with Hendel's description and figures (*cf.* Pl. 12, fig. 14*a* with Hendel, 1914, *Gen. Ins.* **157**, pl. 3, fig. 64).

Neosophira arcuosa (Walker) is a well-defined species easily characterized from other *Neosophira* by the wing markings (Pl. 12, fig. 14*a*) as well as by other details. The development of the lower occiput and genae is especially peculiar, in some specimens a slender lobe is developed from the lower portion of the head which may be equal or longer than the third antennal segment ; in other specimens just a slight lobe is developed.

Descriptive Notes Based Upon the Cotype Series

Head : In direct frontal view the head is distinctly wider than long. The front is broader than long ; the superior fronto-orbital bristles are situated at the middle of the front and are almost as strong as the verticals. A black stripe extends down the median portion of the front to just above the lunule, an arm extends out on each side and runs obliquely to the eye margin just in front of the superior fronto-orbital bristles. The face is moderately concave on the lower portion and the epistoma is projected. The face has a large oval spot across the median portion at the lower third, this does not extend as far as the antennal furrows. The antennae are entirely yellow ; the third segment is about three times longer than wide and is rounded at apex. The arista is long plumose. The occiput is strongly inflated below, at its widest point it is approximately two-thirds the width of one eye. As mentioned above the genae are lobate, refer to Pl. 12, fig. 14*b* for the extreme development of the genae in the male specimens at hand. *Thorax :* Entirely rufous except for a large black spot behind each humerus and for a narrow brown to black longitudinal vitta extending from just behind the suture to approximately opposite the postalar bristles, in line with the sides of the scutellum. Each mesopleuron has a narrow vertical, brown stripe near the hind margin. *Wings :* Venation very near that of *distorta*. The apical cell (cell R5) is not so strongly narrowed, however, at the apex it is greater in width than the length of the r-m crossvein. The cubital cell has a comparatively short pointed lobe at apex, it is less than the length of the vertical section of vein Cu1 (Pl. 12, fig. 14*a*). *Abdomen :* Entirely rufous in both sexes. The ovipositor has been broken off the female specimen at hand.

Length : Body and wings, 11·0–12·0 mm.

Enicoptera pictipennis Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 155.

The type male labeled " Celebes, nr. Makassar, *A. R. Wallace*, B.M. 1858–142 " is in poor condition ; the head has been broken off and has been glued to the bottom part of the nadel.

This is a *Neosophira* Hendel, it has been compared with the type of *N. distorta* (Walker) and the synonymy recorded by Hendel (1914, *Gen. Ins.* **157**, *Dipt. Muscaridae*, p. 78, and 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 139) has been confirmed.

Enicoptera? plagifera Walker

(Pl. 13, fig. 15)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 156.

Walker indicated that he described a female. The unique male specimen in the collection containing the handwritten label "*plagifera*" and the data "Celebes nr. Makassar, *A. R. Wallace*, B.M. 1858–142" is no doubt the type, Walker was often confused on the sex of his specimens.

This is a Trypetinae belonging in the genus *Seraca* Walker. *Sophira bistriga* Walker (*op. cit.* : 160) is a new synonym, based upon a comparison of the types ; Walker's *bistriga* was based upon the female and *plagifera* upon the male. *Colobostrella ruficauda* Hendel (1915, *Ann. Mus. Nat. Hung.* **13** : 429) is also obviously a synonym of *plagifera*, based upon comparisons with the original description and figure ; Malloch (1939, *Proc. Linn. Soc. N. S. Wales* **64** (**3–4**) : 446) had suggested that *Colobostrella ruficauda* was possibly a synonym of *Sophira bistriga*. Consequently the genus *Colobostrella* Hendel, based upon *C. ruficauda*, falls as a new synonym of *Seraca* Walker.

S. plagifera is related to *S. extranea* (de Meijere) (1914, *Tijds. v. Ent.* **57** : 193, pl. 5, fig. 7) but the wing markings are distinctly different, as shown in Pl. 13, fig. 15 and in de Meijere's fig. 7 (*loc. cit.*) and the thoracic markings are quite different : *plagifera* has four black spots on the mesonotum, *extranea* has five, etc.

Descriptive Notes Based Upon the Type

Head : With one pair of inferior fronto-orbital bristles situated near the lower fourth of the front and with two pairs of superior fronto-orbitals, the lower pair is situated slightly above the middle of the front, the upper pair is weak and is situated just below a level with the ocelli. No ocellar bristles are present on the specimen at hand and the postvertical bristles are rather weak, they are about equal in size to the outer verticals. The front has a few small hairs scattered above and below the inferior fronto-orbital bristles. The front is about as wide as long, entirely yellow with the bristles as noted above. Face flat, almost straight in profile ; entirely subopaque black. The upper portions of the genae are black, the portion adjoining each eye margin is yellow and densely gray pubescent. The occiput is entirely yellow, the lower portion is slightly puffed, at its broadest point it is about one-half as wide as the eye. The antennae are yellow-brown, the third segment is about two and one-half to nearly three times longer than wide and is rounded at apex. The arista is long plumose on both sides, the longest hairs are considerably greater than the width of the third segment. *Thorax:* Predominantly bright yellow to rufous. Presutural, humeral, dorsocentral and prescutellar bristles are present. The dorsocentrals are situated just slightly in front of a line drawn between the postalars. The mesopleura are entirely black except for each upper margin which is yellow. The sternopleura are black except for the upper hind cornes and the hind margins which are narrowly yellow, sternopleural bristles are lacking. The mesonotum has a large black spot behind each humerus extending almost to the suture.

The hind portion of the mesonotum is entirely shining black, and a black vitta extends anteriorly from each side almost to the suture, in line with the dorsocentral bristles. The metanotum is black on the sides and yellow in the middle. The scutellum is entirely yellow, the disc is rather thickly covered with short, suberect, brown to black hairs ; it has four strong bristles and one weak pair of secondary bristles. *Legs :* The front coxae and femora are black. The middle femora are predominantly shining black, tinged with rufous on the posterior and dorsal surfaces. The hind femora are dark brown to black ventrally and over apical third, the dorsal portion of the basal two-thirds is yellow. The front tibiae and tarsi are almost entirely black, those of the middle and hind legs are yellow. The front femora each have a row of five to six moderately strong posteroventral bristles extending down the apical third. The mid-tibia has only one strong black spur at apex. *Wings :* As in Pl. 13, fig. 15, with two transverse hyaline marks ; the first extending from the costa just beyond apex of vein R1 to just beyond the r-m crossvein ; the second (distad) mark extends from near the apex of vein R2 + 3 to vein M4 + 5 just before the m crossvein. The wing is otherwise brown to yellow-brown fumose (the basal two-fifths is predominantly yellow, lightly tinged with brown. The apical portion is predominantly brown), refer to Pl. 13, fig. 15. The setae on vein R1 extend over the node to the humeral crossvein. R4 + 5 is setulose from near the base to the apical fourth of the last section of the vein, the setae are rather sparse. The stem of Rs is bare. Vein R2 + 3 is just slightly undulated, but is gently curved upward so that the fourth costal cell is approximately equal in length to the fifth ; the proportions being 55 to 48. The cubital cell has a short, acute point at apex below, approximately equal to the length of the vertical section of vein Cu1. The r-m crossvein is situated distinctly beyond the middle of cell 1st M2, at about the apical three-fifths of the cell. The last section of vein M1 + 2 is about half again longer than the preceding section, the proportions are 39 to 54. The m crossvein is bent outwardly in the median portion. *Abdomen :* The abdominal terga are predominantly black on the sides, yellow down the median portion ; the apices of two, three, four, and the apical one-half of five, are entirely yellow. The venter is yellow to rufous.

Length : Body, 9·2 mm.; wings, 8·55 mm.

Enicoptera rufiventris Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163.

Type male in good condition is in collection from " Moluccas, Amboina, *W. W. Saunders*, B.M. 1868–4 ".

This is a synonym of *Adrama selecta* Walker, see notes under that species.

Enicoptera tortuosa Walker

(Pl. 13, fig. 16)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 155.

A male and a female are in the collection labeled " Celebes ", the male labeled " Macassar ", the female labeled " near Macassar " *A. R. Wallace*, B.M. 1868–142 "; both are in good condition. The male specimen is evidently Walker's type.

This species has been correctly placed by Walker but it has received no attention in the literature except for mention by Hering (1938, *Deutsch. Ent. Zeits.* **1938** : 412) along with *E. flava* Macquart as " nicht geklärten Arten ". Hering (1938, *loc. cit.* and 1937, *Phil. Jour. Sci.* **63** (**1**) : 105–108) followed the change of spelling " *Henicoptera* " as used by Loew (1873 *Monogr. Dipt. N. Amer.* **3** : 21). Hendel (1914, *Wien. Ent. Zeit.* **33** : 78) also used this spelling. Loew gave no reason for making this change and I am using the original spelling *Enicoptera*, as did Walker (1860, *loc. cit.*), Osten Sacken (1882, *Berl. Ent. Zeits.* **23** : 232), Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 441) *et al.*

E. tortuosa appears to be characterized from other known *Enicoptera* by the predominantly rufous thorax with no black vittae on the mesonotum and by having no black markings on the scutellum.

Descriptive Notes on the Type

Head : Entirely yellow to rufous except for the brown eyes, with no dark markings on the front or the face. Three pairs of moderately strong inferior fronto-orbital bristles and two pairs of superior fronto-orbitals present. Ocellar bristles very weak ; postvertical bristles moderately developed, about equal in size to the superior fronto-orbitals. Front broad, as wide as long. Third antennal segment approximately four times longer than wide and almost equal in length to the face. Arista long plumose, the longest hairs are greater than the width of the third segment. *Thorax :* Predominantly yellow to rufous, with black markings on the front portion of the mesopleura, the major portion of the sternopleura, and the hypopleura. The upper portions of the pteropleura are tinged with brown. The humeri are entirely yellow, each notopleural callus is predominantly so with only its upper border brown. The area between the humerus and the notopleural callus is brown and the area immediately above it, in front of the suture, is brown to black. The hind margin of the mesonotum is also black. There are no prescutellar bristles and one pair of dorsocentrals is developed, these are slightly in front of a line drawn between the inner posterior supraalars. The scutellum is all yellow and has four moderately strong marginal bristles. The metanotum is entirely black except for a faintly rufous mark in the median portion. *Wings :* As in Pl. 13, fig. 16. *Legs :* Entirely yellow to rufous except for the brown to black coxae. *Abdomen :* Rather long and slender, parallel sided. The first tergum and the median portions of the other terga are yellow, the sides are yellow-brown. The second tergum is more distinctly brown in color than are the other. Ovipositor reddish brown, the basal portion, *in situ*, is approximately equal in length to the last four visible abdominal segments.

Length of type male : Wing, 12·8 mm.; body, 14·4 mm. Female : Wing, 11·2 mm.; body, 10·8 mm. (not including ovipositor).

Helomyza optatura Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 116.

The type female, from New Guinea, has been examined and the synonymy with *Themaroides quadrifera* Walker has been confirmed. Bezzi (1913, *Mem. Ind. Mus.*

3 : 76) said Czerny found these to be synonyms when he examined the types in 1904.

Helomyza quadrifera Walker

(Pl. 13, fig. 17)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 246.
Helomyza optatura Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 116.

The types of both of these are in the collection, from New Guinea ; Walker described the male as *quadrifera* (he called it a female in his description) and the female as *optatura*. Osten Sacken (1881, *Enumer. Dipt. Malay Arch. Genova*, p. 459) thought these were distinct but as pointed out by Bezzi (1913, *Mem. Ind. Mus.* **3** : 76) Czerny examined the types in 1904 and found them to be synonyms. *Themara ampla* Doleschall *nec* Walker (1859, *Nat. Tijds. Ned. Indie*, **17** : 154) is also a synonym, as was pointed out by Osten Sacken (1882, *Ann. Mus. Civ. Stor. Nat. Genova*, p. 19). Doleschall's species was a *nomen nudum* and would not have priority over *quadrifera*.

This is a Trypetinae and is the type of the genus *Themaroides* Hendel (1914, *Wien. Ent. Zeitung*, **33** : 77). The concepts of this genus need to be clarified somewhat. It was treated by Malloch (1939, *Proc. Linn. Soc. N. S. Wales* **64** (**3–4**) : 416) but does not run well in his key. He keys it in the group which has vein R2 + 3 (2nd vein) undulated ; actually vein R2 + 3 is straight or nearly so. The striking generic characters seem to be that the two pairs of inferior fronto-orbitals are situated close together on the lower part of the front and the lower superior fronto-orbital bristle is situated at the lower one-third to one-fourth of the front, very near the inferior fronto-orbitals.

Descriptive Notes Based Upon the Type

Six strong scutellar bristles are present. The entire body is very thickly covered with short black, suberect, setae. *Head :* Entirely yellow, except for the brown eyes. Hendel says the face is strongly convex in profile ; actually I would consider it rather gently convex and receding below ; the epistomal margin is not at all developed. The third antennal segment is very short, it is scarcely longer than wide and does not extend to the middle of the front. The front measured from lower ocellus to the lunule is about one-third longer than wide. The genal bristles are strongly developed. There are no distinct bristles on the sides of the face or the oral margin. *Legs :* The front femora each have a row of rather strong postero-ventral bristles and a row of posterodorsal bristles. The middle and hind femora each have a row of short, black bristles along the anterior surface. The middle tibiae each have a row of four moderately strong posterodorsal bristles near the middle and two strong, equally developed spurs at apex. Thorax entirely rufous. The dorsocentral bristles are situated about halfway between the postalars and anterior supraalars. Wings as in Pl. 13, fig. 17. *Abdomen :* First three terga and median part of fourth yellow to rufous ; the remainder black except for a faint spot of rufous in the middle of the fifth. Ovipositor black, the basal segment *in situ* is equal in length to segments five and six.

Length : 9·0–9·5 mm.

One specimen, labeled " Hollandia " is in the Zoological Museum, Amsterdam, determined as " *Rioxa quadrifera* Walk." by de Meijere.

Noeeta latiuscula Walker

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.

The type male is in good condition, except for fungus on the abdomen. It is labeled " Borneo, *W. W. Saunders*, B.M. 1868–4 ".

This is an Otitidae falling in the subfamily Plastotephritinae, genus *Rhegmatosaga* Frey (see Frey, 1930, *Notulae Ent.* **10** : 63 and Frey, 1932, *Ann. Mag. Nat. Hist.* (**10**) **9** : 256 for a discussion of the subfamily, in latter and for a description of the genus and type species in the former). *R. insignis* Frey is a new synonym. I have compared the type in the British Museum collection. Frey's description, 1930 *loc. cit.* and Pl. 11, fig. 8 are adequate. *Noeeta latiuscula* Walker was in the British Museum collection as a fruit fly under the genus *Carphotricha* Loew.

Polyara insolita Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 123.

The type apparently is not in the collection. A male and a female are on hand. The female is in poor condition and has a small round label with what appears to be " Mysol " written on it. The male is in good condition and has a label containing what might possibly be a capital M, it also has a handwritten label of Walker's " *insolita* ".

This is the only known species in the genus *Polyara* Walker and is very easily recognized by the peculiar wing venation. Vein R2 + 3 has two spur veins on the underside extending almost to vein R4 + 5 and has one spur vein on the upper side which connects with vein R1. The apical portion of vein M1 + 2 is curved upward, greatly narrowing cell R5. The head is very broad ; in both sexes it is distinctly wider than the thorax. The front measured from the lower ocellus to the lunule is almost twice as wide as long. There are two pairs of superior fronto-orbitals situated on the upper third of the front, and one pair of very weak inferior fronto-orbitals situated near the lower margin of the front. The entire front is covered with short, erect, dark colored hairs. The ocellar bristles are rather small, they are approximately equal in length to the hairs, or bristles, of the occipital row. The face is very broad, in profile it is almost flat and receded below ; the epistoma is not at all produced. The third antennal segment is approximately three to three and one-half times longer than wide ; is gradually tapered toward the apex and is rounded apically. The arista is rather long plumose, the longest hairs are considerably greater than the width of the third segment. Six scutellar bristles are present. The dorsocentrals and prescutellars are well developed. Two pairs of dorsocentrals are present, one is located behind the postalars, just before the scutellum and in line with the basal scutellar bristles, the second pair is just behind a line drawn

between the anterior supraalars. The ovipositor is very elongate. The basal portion, *in situ*, is approximately equal in length to the remainder of the abdomen plus the thorax. Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (3–4) : 417, 418, pl. **11**, fig. 4) has adequately described this genus and species.

Rioxa? bimaculata Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 164.

A synonym of *Ptilona confinis* (Walker). The type is present in the collection from Amboina.

Rioxa confinis Walker

185⅞, *Jour. Proc. Linn. Soc. Lond.* **1** : 132.

The type female, from Sarawak, Borneo, is in fair condition. This species is a Trypetinae, fitting in the tribe Euphrantini and in the genus *Ptilona* van der Wulp.

Ptilona confinis (Walker) is somewhat variable in coloration and wing markings and has apparently been described in the literature under a number of different names. I have confirmed the synonymy of *Trypeta basifascia* Walker (from Macassar) and *Rioxa bimaculata* Walker (from Amboina), based upon a comparison of the types, in the British Museum collection. This synonymy was first reported by Kertész. (See Hendel, 1915, *Ann. Mus. Nat. Hung.* **13** : 446.)

I am also placing *Ptilona armatipes* Hering (1953, *Siruna Seva*, **8** : 4, fig. 4) from Fukien, China, as a new synonymy of *P. confinis* (Walker). The only differences that I can see in these (comparing with Hering's description and figure) is that Hering shows two hyaline marks near the apex of cell 1st M2 ; in Walker's type there is just one. Hering also shows two round marks in the middle of cell M4, in Walker's specimen these are confluent. I feel that these are variable characters and are of no taxonomic value.

I also believe that it is probable that *Ptilona brevicornis* van der Wulp (1880, *Tijds. v. Ent.* **23** : 185, pl. **11**, fig. 7), the type of the genus from Java and *Ptilona nigriventris* Bezzi (1913, *Mem. Ind. Mus.* **3** : 110, pl. VIII, fig. 20), from India are synonyms of *P. confinis*. Both of these have been recorded as widely distributed throughout much of the oriental region and Indonesia. Chen (1948, *Sinensia*, **18** : 84) placed *P. nigriventris* Bezzi in synonymy with *P. brevicornis* van der Wulp and commented that it is a widely distributed, rather variable species and that the coloration differences in the abdomen and wing used by Bezzi were probably individual variations. The variability in the wing pattern of "*nigriventris* Bez." has been discussed by Munro (1935, *Arb. über Phys. und angew. Ent. aus Berlin-Dahlem*, **2** (3–4) : 259–260). According to Hendel (1915, *Ann. Mus. Nat. Hung.* **13** : 446) Kertész had labeled specimens of *nigriventris* as "*Rioxa confinis* Walk." Hennig (1941, *Ent. Beihefte aus Berlin-Dahlem*, **8** : 125) says that *P. nigriventris* is possibly a synonym of "*Rioxa confinis* Walk."

One specimen is in the collection, from Mailum, Negros, Phil. Isl., which compares very well with the type of *confinis*.

Rioxa formosipennis Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 252.

A male and a female are in the collection labeled " Dory, New Guinea, 59–58 ". Both contain Walker's handwritten label "*formosipennis*" and are obviously the specimens which Walker had before him. The male should be considered as the type.

This is a Trypetinae and is the type of the genus *Neothemara* Malloch (1939, *Ann. Mag. Nat. Hist. Ser.* **11**, **4** : 253). It is a well-defined species related to *N. multistriga* (Walker) new combination, but is distinguished by having just one hyaline mark through cell R1 and no hyaline mark at the apex of cell R3 (see Malloch, 1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) pl. XI, fig. 10). In *multistriga* cell R1 has two hyaline marks and cell R3 has one. Also the mesonotum of *formosipennis* has a pair of dark stripes down the middle and the scutellum has a black spot on each side. In *multistriga* the mesonotum has two pairs of black spots and the scutellum is all yellow.

Descriptive Notes Based Upon the Type

Head : The front is yellow with a vertical stripe extending the entire length from the ocellar triangle to the front margin. *Thorax :* Predominantly yellow with a pair of black vittae extending down the mesonotum from about halfway between the prescutellar and the dorsocentral bristles to the inner scapular bristles, in line with the prescutellars. Also, a black vitta is present on each side extending from the inner margin of the suture to the hind margin of the mesonotum and extending inwardly to the prescutellar bristles and a narrow stripe is present down each side of the mesonotum from the outer scapular bristles, just above the humerus, extending down over the notopleuron and over the wing base. The pleura are all yellow except for a longitudinal stripe extending from each propleuron to the pteropleuron. The sternopleuron has a black streak along its top margin. The scutellum is yellow with a moderately large black spot on each side of the disc. *Legs :* Entirely yellow except for brownish discolorations at the apices of the hind femora and at the apical under portions of the middle femora. *Wings :* As in Malloch's figure (*loc. cit.*). *Abdomen :* The basal two segments of the abdomen are yellow ; the third and fourth segments are black with the apical one-third to one-fourth yellow. The fifth segment is dark brown to black with a narrow yellow apex. The basal segment of the ovipositor is black ; it is approximately one-third to one-half times longer than the fifth abdominal segment.

Length : Wing, 7·6 mm.

Note : Specimens of *N. formosipennis* were found in the Zoological Museum, Amsterdam, from New Guinea, which had been determined as "*Scholastes cinctus*" by de Meijere. Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 434) recorded it from Wewak, New Guinea.

Rioxa lanceolata Walker

(Pl. 13, fig. 18)

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 35, pl. II, fig. 3.

The specimen labeled "type, Singapore, *A. R. Wallace, Saunders* coll. 68.4" is a male. Walker had indicated a female in his original, this was no doubt an error. The type is in fair condition but most of the bristles have been broken off. Two other specimens are present from Sarawak, Borneo.

This is the type of the genus *Rioxa* Walker. This group has been rather badly confused in the literature and *Rioxa sens. lat.* apparently contains several possible genera. I plan to revise this complex in the near future. Based upon *R. lanceolata* the *Rioxa sens. str.* are differentiated from related groups by having the subcostal vein arcuate and the apex of Sc slanted gradually to the costa. Also by having vein R1 extending almost to apex of vein R2 + 3 (Pl. 13, fig. 18). Walker's fig. (*loc. cit.*) is accurate but the dark coloration on the front margin of the wing has obscured the details of the venation so the above given characters have apparently been overlooked. In Malloch's key (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 416) *R. lanceolata* would fit the first statement in couplet 7 "first wing-vein exceptionally long, ending in the costal vein above level of upper extremity of the outer cross-vein . . ." (characteristic of *Cheesmanomyia* Malloch). *R. lanceolata* would not, however, properly run to couplet 7, it runs to couplet 11 (from couplet 6) by having only veins R1 and R4 + 5 partly setulose above. In most respects it is entirely different from *Cheesmanomyia*.

This species is readily differentiated from other *Rioxa* by the wing maculation and venation (Pl. 13, fig. 18).

Descriptive Notes Based Upon the Type

Head : Front approximately as wide as long, with two pairs of inferior fronto-orbital bristles located on the lower fourth of the front and with two pairs of superior fronto-orbitals ; the lower pair is situated slightly below the middle of the front. Face gently concave in profile, with a brown protuberance on each side of the epistome (the upper angle of the gena). *Thorax :* The prescutellar bristles are at, or very slightly behind, a line drawn between the posterior supraalars and the dorsocentrals are slightly behind the anterior supraalars. Six strong scutellar bristles are present. No distinct scapular bristles are present. The mesonotum is yellow with a narrow black vitta extending the full length, in line with the dorsocentral bristles and extending over the sides of the scutellum. The thorax is rather broad, as in other so-called *Rioxa*, not counting the scutellum it is slightly longer than wide. *Wings :* The subcostal vein is bowed upward at about its middle portion and does not curve sharply upward at the apex as in typical Tephritidae ; the apical portion slants obliquely into the costa (Pl. 13, fig. 18). This characteristic certainly would suggest that this not a true fruit fly ; however, the species has all other characteristics of fruit flies, all of the normal bristle, wing characters, etc. of true Tephritidae. Vein

R1 is very elongate, it ends in the costa at a point beyond the m crossvein, very near the apex of vein M3. The fourth section of the costa is not quite half as long as the r-m crossvein (Pl. 13, fig. 18). Vein R1 is setulose throughout its length to the node. Vein R4 + 5 is setulose to its base but the stem of Rs is bare. Vein R4 + 5 curves upward at the extreme apex so that the apical cell of the wing (sixth costal section) is rather broad, it is approximately two times wider than the fifth costal section. The r-m crossvein is situated at about the apical fourth of cell 1st M2. The cubital cell has a short but acute lobe at its apex (Pl. 13, fig. 18). *Abdomen :* Black on the sides and over the entire fifth segment and yellow down the median portion of segments one to four.

Seraca abbreviata Walker

(Pl. 13, figs. 19*a–c*)

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 117.

The type female labeled " New Guinea " is in poor condition, the head is gone, some of the legs are missing and the thorax is damaged. Two cotypes containing the same data as the type are in good condition.

This is a *Rioxina* Hering and the type of this genus, *Rioxa de-beauforti* de Meijere (1906, *Nova Guinea Dipt.* **5** (**1**) : 94, fig. 17), is a new synonym of *R. abbreviata* (Walker). The genus is monotypic. The species is readily distinguished from other fruit flies by the wing markings. The entire costal margin and the apical two-fifths of the wing is dark brown fumose, only the posterior basal portion of the wing is yellowish to subhyaline (Pl. 13, fig. 19*c*).

Descriptive Notes on the Type

Head : Two pairs of rather strong fronto-orbital bristles are present, the lower is situated at the middle of the front. There are also two pairs of inferior fronto-orbitals, one strong pair and one rudimentary pair situated immediately below ; the lower bristles are about as strong as the postvertical bristles, which are also rather poorly developed. There are no ocellar bristles on the specimens at hand. Front and face entirely yellow except for a vertical black stripe extending from the epistome up the middle part of the face about two-thirds its length. The middle of the face is gibbose, rather markedly convex. The antennae are rufous to yellow, the third segment is rather small, it is about two times longer than wide and extends scarcely one-fourth the length of the face. The arista is long plumose, the longest hairs are one-half or more the width of the third segment. The occiput is greatly narrowed above, inflated below ; at the widest point it is about equal to half the width of the eye (Pl. 13, fig. 19*a*). The occiput is entirely yellow. *Thorax :* Predominantly yellow, with a median black vitta down the mesonotum from about level with the hind margins of the humeri to the scutellum. The sides of the mesonotum are black. The pleura have two longitudinal black stripes, one extending in line with the propleural spiracle and the other across the upper portion of each sternopleuron. The sternopleural, humeral and presutural bristles are well developed.

The dorsocentral bristles are situated about halfway between the anterior supraalars and the posterior supraalars. Scutellum all yellow, except for the extreme apex, which is brown ; six strong marginal bristles are present and the dorsal surface is rather thickly covered with suberect short black setae. *Legs :* Chiefly yellow, middle and hind femora tinged with brown on their dorsal surfaces. Front femora each with two strong ventral bristles just beyond the middle (Pl. 13, fig. 19*b*). *Wings :* As in Pl. 13, fig. 19*c*. Node of R and stem of Rs bare. *Abdomen :* First three terga yellow except for the brown lateral margins. Terga four and five entirely dark brown to black. Sternum and genitalia yellow to rufous.

Length : Wing, 10·0 mm.; body, 9·2 mm.

Seraca signata Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 165.

The type female is labeled " Mak.", no doubt for Makassar, Celebes. It is in fair condition, the wings are damaged but the details of the venation and coloration are evident. It was in the collection under the genus *Rioxa*.

This species belongs in the genus *Sophira* Walker (new combination) and is related to *S. quadripunctata* Malloch (1939, *Ann. Mag. Nat. Hist.* (**11**) **4** : 255), from the Solomon Islands and is differentiated by having the wings subhyaline, slightly yellowish ; the posterior portion of the wing nearly hyaline and by having the apex of the stigma (cell Sc) brown ; rather than having the wings chiefly yellow, intensely so at base and on anterior portion ; the posterior portion broadly gray-brown fumose and the subcostal cell yellow as in *quadripunctata*. It also differs by having the sixth tergum of the female entirely yellow ; rather than with two black spots on the sixth tergum. *S. signata* is somewhat more slender in build and the ovipositor base is shorter than in *quadripunctata* ; being equal to segment five plus the visible portion of six, rather than equal to segments four plus five. It is also related to *S. holoxantha* Hering (1941, *Siruna Seva*, **3** : 21) but differs by having black spots on the fifth tergum rather than having the abdomen entirely yellow.

S. signata is an almost entirely pale species, except for a black spot on each side of the fifth tergum of the abdomen. The costal and basal cells of the wing are almost hyaline. The r-m crossvein is situated at the apical two-thirds to three-fourths of cell 1st M2. The narrow brown costal band is continuous from just beyond the tip of vein R1 to the apex of vein M1 + 2.

Seraca signifera Walker

(Pl. 14, fig. 20)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 165.

The type male labeled " Celebes " is in fairly good condition. This is the type of the genus *Seraca* Walker.

Colobostrella Hendel (1914, *Wien. Ent. Zeit.* **33** : 79—type of genus, *C. ruficauda* Hendel) and *Zoosina* Hering (1941, *Ann. Mus. Nat. Hung.* **34** : 68—type of genus

Anastrepha extranea de Meijere) are new synonyms of the genus *Seraca* Walker, based upon the study of specimens in the British Museum collection and in the Museums at Leiden and Amsterdam (de Meijere's collection) ; also *Colobostrella ruficauda* Hendel is a new synonym of *Seraca signifera*. I have also confirmed the synonymy of *Kambangania* de Meijere (1914, *Tijd. v. Ent.* **57** : 196—type of genus, *K. metatarsata* de Meijere), this latter synonym (with *Colobostrella*) was reported by Hendel (1915, *Ann. Mus. Nat. Hung.* **13** : 428). Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 445) questioned this synonymy.

This species is readily distinguished from other known *Seraca* by the dark coloration of the body, the presence of only two longitudinal vittae on the mesonotum and by the wing pattern as shown in Pl. 14, fig. 20.

Descriptive Notes Based Upon the Type

Head : Predominantly yellow, except for the eyes and the upper occiput and vertex which are reddish brown. The strong pair of superior fronto-orbital bristles is placed at the middle of the front, a tiny rudimentary pair is situated above these. The front is almost as wide as long, measured from the lower ocellus to the lunule. The face is nearly straight in profile but from a direct frontal view the median upper three-fourths is raised into a keel. At the lower one-fourth of the face is a slight transverse depression, the portion extending below this to the epistoma is flat. From a lateral view the occiput is rather strongly narrowed above and inflated on the lower portion, at its broadest point it is over half as wide as the eye. *Thorax :* Yellow-brown with two submedian black vittae extending the entire length of the dorsum, in line with the dorsocentral bristles. The notopleura are dark brown to black. The upper margins of the mesopleura are brown ; the pleura are otherwise not marked with brown to black. The dorsocentral bristles are located rather close to a line drawn between the inner supraalars. Wings as in Pl. 14, fig. 20. Vein R1 is haired to its base. The node of R has setae only to the humeral crossvein and R4 + 5 is setulose to its base. The stem of Rs is bare. Vein R2 + 3 is slightly undulated as shown in Pl. 14, fig. 20. Cubital cell with a rather short, acutely pointed lobe at apex, the lobe is about equal in length to the vertical portion of Cu1. *Abdomen:* Largely subshining black on the sides of the terga and yellow to rufous down the median portions of terga one to four. Fifth tergum all black. The sternum is entirely yellow to rufous. The genitalia are black.

Length : Wing, 8·75 mm.

Soita psiloides Walker

(Pl. 14, figs. 21*a–b*)

1865, *Jour. Proc. Linn. Soc. Lond.* 8 : 136.

The type male is in the collection in fair condition except that one wing and some bristles are broken off. It is labeled only with an " S. " (probably for Salwatty) on a small round card plus Walker's handwritten label " *psiloides* ". This is the

type of the genus *Soita* Walker (*op. cit.*, p. 135). In Malloch's key (1939, *Proc. Linn. Soc. N. S. Wales*, **64** : 441) it runs best to couplet 9, with the genus *Ichneumonosoma* de Meijere. There are, however, a few hairs on the pleurotergite so it runs imperfectly past couplet 2. It is obviously quite a different genus from *Ichneumonosoma*. That group lacks sternopleural and prescutellar bristles and has but one pair of inferior fronto-orbital bristles and one superior fronto-orbital ; also the ocellar bristles are absent. *Soita* have sternopleurals and prescutellars ; also a tiny pair of ocellar bristles and two pairs of superior fronto-orbitals.

Based upon the type the generic characters of *Soita* are as follows : *Thorax :* Long and slender, mesonotum about two times longer than wide. The sternum is densely setose, thickly covered with short to rather elongate, yellow-brown hairs and bristles. Only two scutellar bristles are present, these are obviously very long and strong (they are broken from the specimen at hand but I presume they would be equal in size to the inner posterior supraalar bristles). The pleurotergite has a few conspicuous hairs, about four or five situated on the lower portion. In this regard it would key out in the tribe Euphrantini but I question its relationship to this group. It would be best to modify Malloch's key to handle those genera with but two scutellar bristles (*Ichneumonosoma* and *Soita*) in couplet 2. The prescutellars, outer postalars, the mesopleural and sternopleural bristles are yellow-brown ; the other main bristles of the thorax are black. The dorsocentral pair is very strong and is situated just behind the suture, approximately in line with the notopleural bristles ; the dorsocentral and the sternopleurals are approximately two-thirds as long as the mesonotum. The scutellars and possibly also the humerals and the presuturals may also be very strongly developed (they are broken on this specimen). *Head* : Rather peculiarly shaped, the vertex is very flat, not at all developed and not visible in direct lateral view. One pair of inferior fronto-orbital bristles is developed on the lower third of the front. There are two pairs of superior fronto-orbitals, the lower is at the middle of the front and is very flat, broad, and strap-like (the bristle is broken from one side and the apex of the other bristle is broken) ; it is apparently longer than the front and is equal in width to about two-fifths the width of the third antennal segment (Pl. 14, fig. 21*a*). The ocellar bristles are rudimentary, very tiny. The third antennal segment is three and one-half to four times longer than wide and is longer than the face. The arista is short plumose. *Legs :* The front femur has a row of five or six rather strong, yellow-brown posteroventral bristles and two moderately developed yellow-brown posterior bristles just below the middle. The middle femur has two rather strong, black preapical bristles on the posterior surface. The middle tibia has a row of strong, black posterodorsal bristles and a ring of three strong, black bristles and two brown, moderately developed bristles at the apex. The hind femur has five rather weak, yellow-brown, anterodorsal bristles on the apical two-fifths. The hind tibia has a row of moderately developed, brown, anterodorsal bristles and one black, rather weak, ventral bristle at the apex. *Wings :* As in Pl. 14, fig. 21*b*, with vein R1 setulose from just below the humeral crossvein. Vein R4 + 5 is entirely setulose, the stem of Rs is bare. The base of vein Cu1 and vein M1 + 2, from the r-m crossvein, is rather strongly setulose to approximately two-thirds the distance to the m crossvein. The cubital

cell has a short, acute lobe at apex below (Pl. 14, fig. 21*b*). *Abdomen :* The sterna of the abdomen are densely covered with short, recumbent yellow-brown hairs as are the terga, and two black bristles are situated near the apex of each sternum. The fifth tergum obviously has a row of very strong black bristles around its apex (these are broken from the specimen at hand). Abdomen long, slender and straight sided, in the type the segments are considerably longer than wide ; the fifth tergum is nearly two times longer than its greatest width.

Specific characters : In addition to the above, the species is entirely yellow to rufous with no dark markings except for the brown eyes and the brown ocellar triangle. The apex of the third antennal segment and the tips of the palpi are tinged with brown. The wings are faintly yellowish fumose. The subcostal cell is yellow, tinged with brown. There is also a brownish fumose spot at the lower apex of cell 1st M2 covering the lower portion of the m crossvein and the tip of vein M3 + 4. The fourth costal section is two times longer than the fifth and the r-m crossvein is situated near the middle of cell 1st M2 (Pl. 14, fig. 21*b*).

Length : Wing, 8·0 mm.; body, 10·0 mm.

Sophira bipars Walker

(Pl. 14, fig. 22)

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 23.

Walker indicated a female in his description but the unique specimen in the collection is a male labeled " *bipars* " in Walker's handwriting. It is from " Moluccas, Ceram." This is probably the type, Walker may have been confused regarding the sex. The specimen is in good condition.

This belongs to the genus *Hemilea* Loew (new combination) and is closely related to *H. praestans* (Bezzi) (1913, *Mem. Ind. Mus.* **3** : 141, pl. X, fig. 51) from India. The only difference which I can find is that in *bipars* the brown marking of the wing fills up nearly all of cell 1st M2 and about half of cell 2nd M2 ; rather than these cells being mostly hyaline as shown in Bezzi's figure (*loc. cit.*). Bezzi figures and describes two hyaline streaks along the costa just beyond vein R1. *S. bipars* has only a small hyaline spot just beyond the apex of R1 (Pl. 14, fig. 22). Bezzi also said that the sides of all of the abdominal segments, except the last, are " broadly reddish "; in *bipars* the last three terga are entirely shining black and the basal two terga are rufous. *S. bipars* differs from *H. dimidiata* (Costa) (1837, *Atti Accad. Sci. Napoli*, **4** : 12, pl. 1, fig. 7) by lacking the brown fasciae (five) down the mesonotum. It is also slightly larger in size and the base of the abdomen is all rufous rather than being largely black and rufous only on the sides.

In addition to the above the head (except for the eyes), antennae, entire thorax and legs are rufous to yellow. The venter of the abdomen is entirely yellow. The wings are as in Pl. 14, fig. 22.

Length : Wings, 6·0 mm. × 2 mm. at the widest point ; body, 5·2 mm.

Sophira bistriga Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 160.

A female specimen labeled " Celebes, Makassar " and containing Walker's handwritten label " *bistriga* " is apparently the type.

This belongs in the genus *Seraca* Walker and is a new synonym of *S. plagifera* (Walker).

Sophira concinna Walker

(Pl. 14, figs. 23*a–c*)

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 132.

Walker indicated a female in his original description but the specimen in the collection labeled " Borneo, *W. W. Saunders*, B.M. 1868–4 " is a male. It is not labeled type but has Walker's handwritten label " *concinna* ".

This fits the concept of the genus *Seraca* Walker in most respects and is probably best treated under this name until the concept can be further clarified. Hering (1952, *Treubia*, **21** (**2**) : 271) treated this as a *Colobostrella*. The sternopleural bristle is well developed, almost as strong as the humeral and because of this it will not fit Malloch's concept of this genus (as *Colobostrella*, 1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 441) but would run to *Gastrozona* Bezzi ; it differs considerably from the latter genus. It may be necessary to erect a new genus or subgenus for *concinna* and possibly other related species.

Descriptive Notes on the British Museum Specimen

Head : As in Pl. 14, fig. 23*a*, as seen from lateral view. One pair of inferior fronto-orbital and two pairs of distinct superior fronto-orbital bristles are present. Front also with a row of ten or more fine, pale brown hairs (most of these very short) extending down each side in line with the inferior fronto-orbital bristle. *Thorax :* Predominantly yellow with four brown stripes extending longitudinally down the mesonotum. The pleura each have a broad brown vertical stripe extending from each side of the mesonotum between the humerus and notopleural callus over the mesopleuron to the sternopleuron, expanding to cover the entire sternopleuron and the hypopleuron. The presutural bristle is rather small, it is about equal in size to the posthumeral bristle. The pleurotergite is bare. *Legs :* The front femur has no hairs or bristles on the under portion. The middle basitarsus is curved and the proportions of the segments of the tarsus, as seen from dorsal view, are as in Pl. 14, fig. 23*b*. *Wings :* Predominantly brown except for a hyaline transverse stripe across the middle and except for a hyaline mark extending longitudinally from the wing base through cell M, the base of 1st M2 and to the wing apex through middle of cell M4 ; this becomes somewhat fumose near the wing margin (Pl. 14, fig. 23*c*). Vein R2 + 3 has one undulation in the median portion. The fifth costal section is about two-thirds as long as the fourth, the proportions are 37 to 56. The r-m cross-

vein is situated slightly before the middle of cell 1st M2. The proportions of the last section of vein M1 + 2 to the preceding section is about 33 to 45. *Abdomen :* Yellow, with four broad brown vittae, one on each side, and two submedian, extending the full length.

Sophira distorta Walker

(Pl. 14, figs. 24*a–b*)

1857, *Trans. Ent. Soc. Lond. n.s.* **4** : 230.

The type male is labeled " Celebes, Mdme Pfeiffer, B.M. 1855–22 ". It is in rather poor condition, the head has been partially eaten away. A female specimen in the collection labeled " Celebes, Menado, Mdme I. Pfeiffer, B.M. 1855–22 " is in good condition.

This is the type of the genus *Neosophira* Hendel and *Enicoptera pictipennis* Walker (1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 155) is a synonym.

Descriptive Notes Based Upon the Type

A large, predominantly yellow to rufous species with black markings only on the front and face. *Head :* The front is as broad as long and has a broad, black stripe extending down the middle from the vertex to the lunule. One pair of moderately small, superior fronto-orbital bristles is developed, these are about equal in size to the small bristle on the hind portion of the mesopleuron. The face is slightly convex on the upper portion and is rather deeply concave at about the lower third, with the epistoma strongly projecting (Pl. 14, fig. 24*a*). The median portion of the face (the area of the concavity) has a transverse black mark extending into the sides of the antennal furrows. Only one pair of bristles is present on the back of the head, these are the inner verticals ; the outer verticals and postverticals are lacking. There are no ocellar bristles on the specimens at hand. The upper occiput, behind the eyes, has a row of rather fine, brownish hairs ; no distinct bristles are developed in this occipital row. There are no genal bristles developed and no bristles are present along the sides of the oral margin. The genae are approximately one-third the height of the eye. The first antennal segment is yellow, the second is yellow except for the black dorsal surface. The third segment is yellow basally and brown to black toward the apical portion, it is about two and one-half to nearly three times longer than wide and is rounded at apex. The arista is long, plumose, the longest hairs are considerably greater than the width of the third segment. *Thorax :* With no prescutellar, dorsocentral, humeral, presutural, sternopleural or pteropleural bristles. The pleurotergite is bare. The mesonotum and scutellum are densely covered with fine, suberect, brown hairs. The scutellum has four marginal bristles. *Legs :* The hind two pairs of femora are long and slender, they are approximately equal in length to the combined lengths of the first four abdominal segments. The legs are completely unarmed, with no bristles, except at the apices of the middle tibiae. Each middle tibia has one long and one short apical spur. *Wings :* With very characteristic venation (Pl. 14, fig. 24*b*). The subcostal vein slopes gently into

the costa. Vein R1 is very elongate and reaches the costa at a point considerably beyond a level with the m crossvein. Vein R2 + 3 is undulate, it has one upward curve at about the middle. The last section of vein M1 + 2 is rather sharply curved upward toward apex, greatly narrowing the apical cell. The r-m crossvein is situated near the apical one-fourth to two-thirds of cell 1st M2. The cubital cell has a narrow, sharply pointed, lobe at apex, this is longer than the vertical section of vein Cu1. Vein R1 is setulose from the humeral crossvein approximately to its tip. The other veins are bare except for about eight to ten setae along the basal portion of vein R4 + 5. The wing markings are as in the Pl. 14, fig. 24*b*. *Abdomen :* Entirely rufous in female and with terga two to four discolored with black in the median portions in the male. The abdomen is densely covered with suberect fine yellow to brownish pile. The ovipositor is yellow, the basal segment (in the specimen at hand) is almost equal to the length of terga three to five.

Length : Body of both sexes 14·4 mm.; wings of male, 14·8 mm.; wings of female, 15·7 mm.

Sophira punctifera Walker

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 15.

The female specimen is not marked type but has the Walker handwritten label "*punctifera*" and "Moluccas, Gilolo". It is probably the specimen which Walker described.

This belongs in the genus *Hexacinia* Hendel. *Hexacinia multipunctata* Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 438, pl. 11, fig. 13) is a new synonym. Enderlein (1911, *Zool. Jahrb.* **13** (**3**) : 433) treated *Sophira punctifera* Walker as a synonym of *Acinia stellata* Macquart, 1851 (this name is preoccupied and *radiosa* Rondani must be used). This synonymy is not correct.

Malloch's description, and figure, of this species (as *multipunctata*) are adequate. It is distinguished from other known *Hexacinia* by having three hyaline spots along the wing margin in cell R1 and by having only the extreme apex of cell R5 hyaline.

Sophira venusta Walker

(Pl. 15, fig. 25)

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 35.

Two female specimens are in the collection, neither is marked type but one from "Singapore, *W. W. Saunders*, B.M. 1868–4" has Walker's handwritten label "*venusta*" and is probably the type. The other specimen is labeled "Molucca, *A. R. Wallace*, B.M. 1855–9".

This is the type of the genus *Sophira* Walker and is distinguished from other known species by having four longitudinal brown streaks on the wings (Pl. 15, fig. 25).

The genus *Sophira* has been characterized by the presence of six scutellar bristles and by the lack of a sternopleural bristle. This can be slightly misleading, the genotype has small, rudimentary, secondary scutellars. These are easily overlooked and if the bristles are broken off the bases may be difficult to discern. Shiraki (1933, *Mem. Fac. Sci. Agric. Taihoku Imp. Univ.* **8** (**2**) : 320) characterizes the genus as having all yellow bristles and " having three very oblique bands " in the wings. The type of the genus has all black bristles except for the secondary scutellars which are pale yellow and the wings lack oblique bands. Shiraki's diagnosis pertains to the genus *Tritaeniopteron* de Meijere ; I have published a review of the genera *Sophira* and *Tritaeniopteron* see Hardy, 1957, *Proc. Haw. ent. Soc.* 16(3) : 366-378.

Descriptive Notes Based on the Type

Wings : Predominantly yellow fumose with a brown band extending from end of subcostal vein, filling all of cell Sc, and extending along the costa about halfway through the apex of cell R3. A narrow brown streak also extends over veins R4 + 5, M1 + 2, and M3 + 4, as in Pl. 15, fig. 25. *Thorax* and *abdomen :* Predominantly yellow. The pleura each have a vertical stripe of black extending from the lower part of the sternopleuron to the upper margin of the mesopleuron ; this extends onto the mesonotum at the suture. The mesonotum also has a narrow black stripe on each side, in line with the outer scapular bristles, extending as far as the anterior supraalar bristles. Behind the dorsocentral bristles the mesonotum is black. The first abdominal tergum is yellow. The second has a black transverse band near its base. The third and fourth terga each have a moon-shaped black band extending across the basal margin in the middle and curving posteriorly toward the posterior lateral margins of the segment. The fifth tergum has an oblique black stripe on each side, extending from the posterolateral margin to the base of the segment.

Strumeta concisa Walker

(Pl. 15, figs. 26*a–b*)

1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 227.

Walker indicated a female in the original description but the unique specimen in the collection bearing the handwritten label " *concisa* " is a male. It is from " Dutch East Indies, Waigeu Is., *W. W. Saunders*, B.M. 1868–4 " and is in good condition except that some bristles are lost. This specimen is very probably the type.

I have placed *Strumeta* Walker as a subgenus under *Dacus* Fabricius (Hardy, 1955, *Ann. Ent. Soc. Amer.* **48** (**6**) : 436) and the species name is preoccupied by *Dacus concisus* Walker (1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 252).

Strumeta concisa apparently belongs to an undescribed genus and I am herein proposing the generic name *Curvinervus* n. gen. and am changing the species name to *walkeri*.

This is a Trypetinae with a very characteristic wing venation and I am unable to place it in any of the known genera. In Malloch's key (1939, *Proc. Linn. Soc. N. S.*

Wales, **64** (**3–4**) : 415 and 441) it fits in group III by having four scutellar bristles and it runs, very imperfectly, in the first part of couplet 7 to *Enicoptera* Macquart. It shows no actual relation to this group, however, and is radically different. Vein R2 + 3 (second vein) has three upward loops rather than one, it is not fused with vein R1 and has a strong appendix on the upper side of the third loop (Pl. 15, fig. 26*b*). It also differs from *Enicoptera* by having the fourth costal section (cell R1) slightly longer than the fifth section (cell R3), rather than not over one-fifth as long ; the apical cell (cell R5) is expanded at the wing margin, rather than strongly narrowed and the section of vein M1 + 2 before the r-m crossvein is nearly straight, rather than strongly bent downward (*cf.* with Pl. 13, fig. 16).

Description of the Species Based Upon the Walker Specimen

Head : The front, measured from the lower ocellus to the lunule, is as wide as long. One pair of incurved, rather small, inferior fronto-orbital bristles is situated at the upper fourth of the front ; on one side a rather weak secondary superior fronto-orbital bristle is developed, it is about equal in size to the ocellar bristles. The ocellars are comparatively weak. The face is entirely yellow with no dark markings and is moderately concave in profile. The occiput is rather swollen at the lower portion, at its broadest point it is almost one-half as wide as the eye. The front is rather thickly covered with rather long hairs, these are almost as strong as the ocellar bristles and from a lateral view this may give the impression that there are numerous inferior fronto-orbital hairs (Pl. 15, fig. 26*a*) ; many of these are in the area directly above the inferior fronto-orbitals but are equally scattered across the middle portion of the front. The antennae are yellow, the third is tinged with brown. The third segment is rather broad and is rounded at the apex, it is slightly less than two times longer than wide. The arista is short plumose, the longest hairs are less than half the width of the third segment. *Thorax :* Chiefly yellow, tinged with brown on the mesonotum behind the humeri, and extending over the notopleural calli ; also the hind portion of the mesonotum is brown. The presutural bristles are lacking. The humeral bristle is rather weak, not quite as long as the inferior fronto-orbitals. The pteropleural and sternopleural bristles are rather weak, are brown to yellow in color and about equal in size to the inferior fronto-orbitals. The scutellum is yellow and has four bristles, it also has a tiny, pale-colored seta on each side in the position of the secondary scutellars. The metanotum is dark brown, tinged with yellow in the median portion. The pleurotergite is bare. The entire pleura and legs are clear yellow. *Legs :* The middle tibia has a single strong spur at the apex. The femora are all very slender and are armed with some slender pale hairs, but no bristles, beneath. *Wings :* Predominantly brown fumose with four small hyaline spots along the anterior margin of the costa, with another round hyaline spot near the upper middle of cell R5, with a narrow transverse hyaline mark extending from the end of the subcostal vein to the basal part of M4 + 5, and also with some hyaline markings along the posterior border of the wing. Venation and coloration as in Pl. 15, fig. 26*b*. Vein R2 + 3 is very strongly undulated and has an appendix on the upper side of the vein. R1 is setulose only to the humeral crossvein. The stem of Rs is bare. The apical portion of the cubital cell is developed

into a narrow acutely pointed lobe. This is slightly longer than the vertical portion of vein Cu1. Cu1 + 1st A curves downward slightly on its course to the wing margin. The wing is comparatively long and slender, almost three times longer than wide. *Abdomen :* Basal two segments entirely clear yellow, the base of the third segment is narrowly yellow. The abdomen is otherwise polished black on the dorsum, yellow on the venter.

Length : Wing, 6·0 mm.

Strumeta conformis Walker

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 34.

No type had been designated but a female specimen, in good condition, labeled " *conformis* " in Walker's handwriting is apparently the type. It is from " Singapore, *W. W. Saunders*, B.M. 1868–4 ".

This is the type of Walker's genus *Strumeta* which I treat as a subgenus of *Dacus* (Hardy 1955, *Ann. Ent. Soc. Amer.* **48** (**6**) : 436) and *conformis* is a synonym of *Dacus* (*Strumeta*) *umbrosus* Fabricius (Hardy & Adachi, 1954, *Pac. Sci.* **8** (**2**) : 184).

Strumeta helomyzoides Walker

1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 220.

One male specimen is in the collection labeled " Moluccas, Misol* Is.", it is not labeled type but is probably the male specimen which Walker described. The specimen is in good condition.

This is a Trypetinae belonging in the genus *Themarohystris* Hendel. *T. erinaceus* Hendel (1914, *Ann. Mus. Nat. Hung.* **13** : 433), the type of the genus, is a new synonym of *T. helomyzoides* (Walker). Based upon the comparison of Walker's type with Hendel's description and with specimens in the British Museum collection ; refer to Hendel (*loc. cit.*) and to Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 422) for descriptive details of this species.

Strumeta repleta Walker

(Pl. 15, fig. 27)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 296.

The type had not been designated but a female specimen with the handwritten label " *repleta* " from " New Guinea, Bachan†, *A. R. Wallace*, B.M. 1858–142 " is obviously the type.

This is a Trypetinae belonging in the genus *Neothemara* Malloch (new combination). It belongs in the group which have vein Cu1 setulose before the downward curve and seems to fit closest to *N. exul* (Curran) (1936, *Proc. Cal. Acad. Sci.* **22** (**1**) : 27)

* Misspelling for Mysol.
† Misspelling for Batchian.

but the wing maculation is very different (*cf.* Pl. 15, fig. 27 with Malloch, 1939, *Ann. Mag. Nat. Hist.* (**11**) **4** : 254, pl. XI, fig. 15), and the legs are predominantly black rather than rufous.

Descriptive Notes Based Upon the Type

Thorax : Predominantly yellow with a pair of black stripes extending longitudinally from the inner scapular bristles to about a level with the dorsocentral bristles, in line with the scapulars. Another longitudinal stripe is present on each side, beginning just behind the suture and extending to the hind margin, in line with the lateral margins of the scutellum and continuing as a black line across the hind margin of the mesonotum. Also a short black longitudinal stripe is present on each side, extending from the presutural bristle to the front margin of the thorax just above the humerus, and another short, black stripe extends across the notopleural callus to the wing base. The pleura have a narrow black longitudinal vitta from each propleuron extending to the middle of the pteropleuron, this is interrupted slightly at the hind margin of the mesopleuron ; the black portion on the pteropleuron is just a spot. The upper half to two-fifths of each sternopleuron is also black. The scutellum is all yellow except for a narrow black band across the base. The metanotum is black. *Legs :* The femora are all brown to black except for a yellow streak down the dorsum and except for rather narrow yellow apices. The tibiae and tarsi are entirely yellow. *Abdomen :* The first two terga are entirely yellow ; the third is chiefly black with a narrow yellow base and a narrow yellow apex. The fourth tergum is broadly yellow at the base and apex ; brown on the sides and with two brown spots near the middle. The fifth tergum is yellow at the base and apex, with two spots in the middle which are narrowly joined at the center and on the sides to the brown spots covering the lateral margins. The ovipositor is black, the basal portion, *in situ*, is approximately equal in length to segments four and five.

Length : Wing, 6·4 mm.

Themara ampla Walker

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 33, pl. 1, fig. 5.

The type male is labeled " Singapore, ex coll. *W. W. Saunders*, 68–4 " and is in fair condition. Four other specimens are in the collection from Borneo and Sumatra.

This is the type of the genus *Themara* Walker and as pointed out by Walker (*op. cit.*, p. 134) the species is a synonym of *Achias maculipennis* Westwood (1848, *Cab. Orient. Ent.* p. 38, pl. 18, fig. 4).

This fits the concept of *Themara* proposed by Hendel (1928, *Ent. Mitt.* **17** (**5**) : 355) except that he said the pteropleural bristle is lacking ; in the type species this bristle is rather well developed. Hendel places considerable generic importance upon the presence or absence of setae along vein M3 + 4 and the portion of vein Cu before the downward curve (collectively spoken of as Cu by Hendel and 5th

vein by Malloch *et al.*). Malloch does not use this as a generic character (for *Themara*) but separates *Themara* from *Neothemara* Malloch by having just one pair of inferior fronto-orbital bristles and by having the secondary scutellars short and the radial sector bare. The latter is not correct, setae are present on the Rs in the type species. The first character might also be misleading since the type of *T. ampla* (and some other specimens) has two pairs of inferior fronto-orbitals placed close together on the lower one-fourth of the front ; one of these is rather weakly developed and this is apparently abnormal, other specimens I have examined have but one pair. Malloch also indicated that the mesopleural hairs are much stronger in *Neothemara* than in *Themara* ; I see no differences in these hairs in comparing the types of both genera. The best characters which I see for separating *Themara* from *Neothemara* are the following : in *Themara* the lower superior fronto-orbital bristles are situated slightly below the middle of the front, while in *Neothemara* they are situated distinctly above the middle. *Themara* normally has but one distinct inferior fronto-orbital bristle, only four strong scutellars, vein R2 + 3 is distinctly undulate and M3 + 4 and the straight basal section of Cu are setulose. In *Neothemara* two well-developed inferior fronto-orbitals and six strong scutellars are present, vein R2 + 3 is but slightly curved and veins M3 + 4 and the base of Cu are setulose only in *N. exul* (Curran) and *N. repleta* (Walker).

The very broad head (stalked eyes) of the male is probably one of the distinctive characters of *T. maculipennis* although the extent of development of the sides of the head varies considerably in different individuals. From the wings I see no way to differentiate *T. microcephalus* Hering (1938, *VII Intern. Kongr. für Ent.* **1** : 175) ; Hering said, however, that the head of the male is not widened in that species.

Descriptive Notes Based Upon the Type of T. ampla *Walker*

Head : The aristae are long plumose. The secondary inferior fronto-orbital bristles lie close to and are much smaller than are the principal bristles. The front, measured from the lower ocellus to the lunule, is distinctly wider than long. The ocellar bristles are very weak, hairlike. The face is somewhat receded below. The epistoma is not at all produced. *Thorax :* Entirely rufous except for a black spot on the hind portion of the mesonotum, in front of the scutellum. The hind margin of the scutellum is also blackened and the metanotum is predominantly dark brown to black. The scutellum has four strong marginal bristles and a pair of weak secondary bristles. *Wings :* Walker's fig. 5, pl. 1, is ample for the wing markings. Vein R1 is setulose just to its base, there are no setae on the node. The radial sector is setulose and R4 + 5 has setae almost to its apex. Vein M3 + 4 is setulose almost to its apex and the basal portion of vein Cu1 has setulae to the point where it meets the m-cu crossvein. Vein R2 + 3 is rather strongly undulated and bends upward on its apical portion so that the fifth costal section is almost as long as the fourth. The r-m crossvein is situated approximately at the apical one-fifth of cell 1st M2. The cubital cell has a sharp pointed, rather slender, apical lobe below. This is slightly longer than the vertical section of vein Cu1. *Abdomen :* The first tergum is entirely yellow. The base and apex of the second and the apex of the third are yellow, the remainder of the terga are black. The venter is entirely yellow to rufous. Ovipositor

yellow. The basal segment, *in situ*, is just slightly longer than the fifth abdominal tergum.

Length : Wing, 8·8 mm.; body, 8·4 mm.

Trypeta alvea Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1027.

The type male is in poor condition, it was listed by Walker as being from " Australia, from the Rev. J. Wenham's collection ". The locality is obviously an error, this is a synonym of *Eurosta comma* Wiedemann from the United States.

Trypeta amplipennis Walker

(Pl. 15, fig. 28)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 159.

The type female, labeled " Celebes, Macassar, *W. W. Saunders*, B.M. 1868–4 " is in fairly good condition except that the wings are partially broken.

This is a Tephritinae belonging in the genus *Platensina* Enderlein (see Munro, 1947, *Mem. Ent. Soc. So. Afr.* **1** : 216). *P. amplipennis* (Walker) is very close to *P. malaita* Curran (*P. dubia* Malloch is a synonym of *malaita*), the only differences which I find are in the pattern of the spots in the wings and these are obviously quite variable. The basal cells are completely yellow-brown fumose in *amplipennis* and are hyaline in *malaita*. In *amplipennis* the subcostal cell is entirely dark colored and the hyaline spots over the wing differ as shown by comparing Pl. 15, fig. 28 with fig. 1 of Curran (1936, *Proc. Calif. Acad. Sci. 4th ser.* **22** (**1**), plate 1).

In addition to the above notes : *Thorax :* Gray pollinose with three rather distinct, pale brown, longitudinal vittae extending down the middle, one central and two in line with the dorsocentral bristles. The pleura are rufous in ground color. *Legs :* Entirely rufous. *Wings :* As above and as in Pl. 15, fig. 28. *Abdomen :* Polished black, faintly rufous on the sides of the first tergum. Ovipositor shining black, the basal portion, *in situ*, is about equal in length to the last three visible abdominal segments.

Length : Wing, 5·4 mm.; width of wing, at broadest point, 2·8 mm.

I have compared the types of *Platensina* Enderlein, 1911 (*sumbana* Enderlein) and *Tephrostola* Bezzi, 1913 (*acrostacta* Wiedemann) and have confirmed the synonymy of these genera (see Shiraki 1933, *Mem. Fac. Sci. Agric. Taihoku Imp. Univ.* **8** (**2**) : 386).

Trypeta antiqua Walker

1852, *Ins. Saunders.* **1** (**4**) : 378.

The type is not in the British Museum collection. Two specimens from Mesopotamia are here under the name *Trupanea antiqua* (Walker), determined by " G. A. K. M." Walker's type was from the East Indies. I cannot be sure that these are correctly identified. I am unable to place Walker's species except to say that it is

no doubt a Tephritinae. Bezzi (1913, *Mem. Ind. Mus.* **3** : 67) said *antiqua* Walker " is said to be an *Ensina*, and probably belongs to that genus or to *Trypanea* ".

The specimens in the collection do fit Walker's description but that, of course, is very vague and is inconclusive. The specimens at hand are characterized by the very faint yellow-brown markings in the wing, consisting of a more or less continuous series of spot-like marks extending from the costa at apex of cell R1 to vein M1 + 2, about two-fifths the distance beyond the m crossvein and back up to the costa near the middle of cell R1. A spot is present at the top and at the bottom of the m crossvein, another extends across the r-m cross vein, and another faint spot extends through cell R1 directly beneath the apical portion of the subcostal cell. Also, a very faint spot is situated on vein M3 + 4 at its apical three-fifths. The subcostal cell is faintly yellow hyaline, yellow-brown at its apex. The first and second costal cells are completely hyaline as is the remainder of the wing except for the mentioned spots.

Trypeta approximans Walker

(Pl. 15, figs. 29*a–b*)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 160.

Walker indicated only a female specimen in his original description but the specimen labeled type is a male from " Celebes, Macassar, *A. R. Wallace*, B.M. 1858–142 ". A female from the same locality is also present labeled " *W. W. Saunders*, B.M. 1868–4 ". Both are in poor condition largely due to the way they are pinned, the nadel obscures most of the characters of the mesonotum.

This species is in the collection under the genus *Acidia* Robineau-Desvoidy but apparently represents an aberrant Tephritinae and seems to belong to an undescribed genus. I am proposing the name *Curticella* n. gen. for *approximans* Walker.

I am unable to place this in any genus known to me. It seems to best fit in the Tephritinae because the front is covered with the flat, squamose, white hairs typical of members of this subfamily and under high magnification the bristles of the occipital row are much thicker than is normal in other subfamilies ; these bristles are all black, however, not pale colored as in typical Tephritinae. *Curticella* apparently is most closely related to *Tephrella* Bezzi and would run here in Malloch's key (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 455). It differs from *Tephrella* in a number of important respects : All of the head bristles are black, those of the occipital row are short and thick ; the ocellar bristles are very weak, hairlike ; the third antennal segment is rather long and slender, four or five times longer than wide and extends almost to the oral margin. The arista is short, but distinctly, pubescent. The genae are about one-third as high as the eye (Pl. 15, fig. 29*a*). The subcostal vein enters the costa at a point about opposite the basal fourth of cell 1st M2 so that the third costal section (cell Sc) is extremely short, about one-sixth as long as second section, and vein R2 + 3 slants upward rather sharply so that the fifth costal section is about as long as the fourth and nearly two times longer than the sixth (Pl. 15, fig. 29*b*). In *Tephrella* (which I have examined) at least some of the head

bristles are yellow, those of the occipital row are entirely yellow. The ocellar bristles are very strong, extending nearly two-thirds the length of the front. The third antennal segment is short and rounded, it is scarcely one and one-half times longer than wide. The arista is bare. The genae are narrow. The third costal section is distinctly more than half as long as the second. Vein R1 enters the costa at a point about opposite the middle of cell 1st M2. The fifth costal section is about one-half as long as the fourth and is scarcely longer than the sixth.

Description Based Upon the Type

Head : From direct frontal view it is just slightly wider than long. In profile it is nearly two times higher than long (Pl. 15, fig. 29*a*). The front is about one-third longer than wide, is reddish, tinged with brown in the central portion and is black along the orbits, the vertex, and in front of the ocellar triangle ; the sides are rather densely gray pubescent from a point about opposite the lower superior fronto-orbital bristles. Three pairs of inferior fronto-orbitals and two pairs of superior fronto-orbitals are present ; these are moderately weak, not well developed. The face is straight in profile, it is dark brown to black in ground color and rather densely gray pubescent. The occiput is shining dark brown, the lower portion is expanded and is approximately half the width of the eye (Pl. 15, fig. 29*a*). The antennae are brown. *Thorax :* Shining black. The mesonotum and the sternum for the most part are completely obscured by the nadel. There are obviously two pairs of dorso-central bristles present, the anterior pair is situated approximately in line with the anterior supraalar bristles. Only the two basal bristles are developed on the scutellum. The halteres are entirely yellow. *Legs :* The femora are dark brown to black. The tibiae and tarsi, except for the brown apical subsegments of the hind two pairs, are entirely yellow. *Wings :* As described above and as shown in Pl. 15, fig. 29*b*. The r-m crossvein is situated near the apex of cell 1st M2. The wings have one hyaline mark extending from the costa through the second costal cell ; two hyaline wedge-shaped marks from costa extending through cell R1 ; a round hyaline dot in cell R5 just beyond the m crossvein ; another hyaline dot in cell 1st M2, approximately beneath the m crossvein and three hyaline streaks from the margin, one extending through cell second M2 near the hind margin to the m cross-vein, and two streaks through the apex of cell M4 ; cell M4 also has a small hyaline dot at its base. The posterior lobes of the wing are subhyaline. *Abdomen :* Entirely shining black. In the female the sixth abdominal segment is almost as long as the fifth. The ovipositor is polished black, the basal segment is almost equal in length to the segments three to six.

Length : Body and wings, 2·6 mm.

Trypeta atilia Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1021.

The type male from " China, Foochow ", is in good condition.

This is a Trypetinae belonging to the genus *Sphaeniscus* Becker. It is a synonym of *S. sexmaculatus* (Bezzi) and I have treated this as an Oriental and Pacific subspecies

under the combination *Sphaeniscus sexmaculatus atilia* (Walker). See Hardy (1955, *Pac. Sci.* **9** (1) : 78) and Hardy & Adachi (1956, *Ins. Micronesia*, **14** (1) : 20) for descriptions and figures of this subspecies. *Trypeta melaleuca* Walker (1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 238) is a synonym. The synonymy was first reported by Osten Sacken (1881, *Ann. Mus. Civ. Stor. Nat. Genova*, **16** : 459), see also Hardy (*loc. cit.*) for other synonymy.

Trypeta basalis Walker

1852, *Ins. Saunders.* **4** : 380.

The type, from Brazil, is in the collection under *Trypeta*. This is a Tephritinae apparently belonging in the genus *Xanthaciura* Hendel. Hendel (1914, *Abh. Ber. K. Zool. Anthrop. Mus. Dresden*, **14** : 46) and Aczél (1949, *Acta Zool. Lilloana*, **7** : 254) both list this under the combination *Xanthaciura* ? *basalis* (Walker).

Trypeta basalis Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 120.

The type male is from Aru Island. This is an Otitidae and belongs in the genus *Rivellia* Robineau-Desvoidy. The name *basalis* is preoccupied by *Trypeta basalis* Walker (1852, *Ins. Saunders.* **4** : 380), from Brazil and I am proposing the name *Rivellia distobasalis* n. name for this species from Aru.

This species seems to be closely related to *R. radiata* Hendel. It differs by having the legs predominantly yellow, rather than entirely dark brown to black ; by having the hyaline mark in the second costal cell extending across the wing to vein M1 + 2, rather than extending only through the base of cell R1 ; also by having the hyaline mark at the basal portion of the subcostal cell extending transversely through the wing, beyond the confines of the brown markings, to vein M3 + 4, rather than this mark extending just to vein R4 + 5. In *radiata* cells R, M and the basal half of cell 1st M2 are entirely brown.

Trypeta basifascia Walker

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 158.

The type female from " Makessar " is in fair condition. This species belongs in the genus *Ptilona* van der Wulp and is a synonym of *P. confinis* (Walker).

Trypeta cluana Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1019.

The specimen labeled type " Australia, Pres. by the Ent. Club, B.M. 1844–12 " is a female. Walker indicated a male and a female in his original description, I cannot find the male specimen in the collection. A. N. Burns has informed me

that a specimen is in the National Museum of Victoria from New South Wales, this may be Walker's male.

This is an Otitidae and is in the collection under the genus *Celetor* Loew and is placed as a synonym of *C. caerulea* (Macquart) (1846, *Dipt. Exot., Suppl.* **1** : 212, pl. 18, fig. 15). The above synonymy was recorded by Hendel (1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **8** (**1**) : 247).

Trypeta contraria Walker

(Pl. 15, fig. 30)

1852, *Ins. Saunders.* **4** : 385, pl. VIII, fig. 7.

The type male is in the collection labeled " India, *W. W. Saunders*, B.M. 1868–4 ". The original description said the type was from the " East Indies ". It is in very poor condition, the body and wings are covered with debris and the majority of the bristles are broken off. It is extremely difficult to see the important details and I cannot definitely place this to genus. In Bezzi's key (1913, *Mem. Ind. Mus.* **3** : 90) it seems to fit his concept of *Acidia* Robineau-Desvoidy but his concept, is in large part, obviously erroneous. I have compared it with the type of the genus *Acidia* (*cognata* Wiedemann) and it definitely does not fit in this genus. There are no propleural bristles or strong hairs developed as in *Acidia* and it appears that a sternopleural bristle is present ; *Acidia* lacks sternopleurals.

Descriptive Notes on the Type

Head : Front broad, about equal in width to its length. There appear to be three pairs of inferior fronto-orbital bristles and two pairs of superior fronto-orbitals. The anterior superior fronto-orbital is situated near the upper two-fifths of the front. The ocellar area of the head is damaged and I cannot check the ocellar bristles. The bristles of the occiput are apparently all black. The face is slightly raised down the median portion and is vertical in lateral view ; the epistoma is not projecting. Head entirely yellow to rufous except for the reddish brown eyes. The eyes are oval in shape, slightly higher than long. The antennae are yellow to rufous, the third segment is about two times longer than wide and is rounded at apex. The arista appears to be pubescent. It is covered with debris, and the hairs could have been rubbed off. *Thorax :* Entirely rufous with black bristles and with an abundance of black recumbent hairs over the mesonotum. The humeral, presutural and sternopleural bristles are well developed. The scutellum has four strong bristles, there is no evidence of a secondary pair. *Legs :* Entirely yellow to rufous. Front femur with three black bristles on the underside near the apex, two of these are slightly longer than the greatest width of the femur. *Wings :* Predominantly brown, with two wedge-shaped hyaline marks from about the middle of the costal margin ; one starts at the costa just beyond the apex of vein R1 and extends as a narrow triangle through the radial cells into the apical fourth of cell 1st M2 ; the second begins at the costa at about the middle of cell R3 and extends just beyond vein R4 + 5. There is also a small hyaline spot at the wing apex in cell 2nd M2. Vein

R1 is setulose to a level opposite the humeral crossvein. Vein R4 + 5 has about six short black setae at its base just beyond the fork; it has just one black bristle beyond this point, this is situated just before the r-m crossvein. Vein R2 + 3 is straight, or nearly so. The cubital cell has a very short lobe at apex below, its length is much less than the length of the vertical portion of the vein Cu1 (Pl. 15, fig. 30). *Abdomen :* Yellow to rufous on the basal segments with brown discolorations extending over the apical two terga. This is interrupted by yellow down the middle line and on the extreme lateral margins. The venter of the abdomen is entirely yellow. The genitalia are all yellow.

Length : Wing, 6·8 mm.

Trypeta cylindrica Walker

1852, *Ins. Saunders.* **4** : 380.

The original description says the type was from the " East Indies ", the specimen marked " type " in the British Museum collection is labeled " India, *W. W. Saunders*, B.M. 1868–4 ". It is in very poor condition.

This is an Otitidae but I am unable to place it to genus, I find nothing like it in the collection. The species has completely hyaline wings and yellow legs. The thorax and abdomen are predominantly shining blue-black. The scutellum and halteres are yellow. The humeri each have a yellow streak through the middle. The upper portion of each sternopleuron has a yellow spot. The legs are entirely yellow. The head is chiefly yellow, the back part of the occiput is polished black and the front has a brown streak down each side. The face has a median brown to black spot below. The first two antennal segments are black; the third is yellow, is approximately two times longer than wide and is rounded at the apex. The thorax is rather densely covered with recumbent white pile. The wings are so covered with debris that it is very difficult to follow the venation.

Length : Body, 5·25 mm.

Trypeta dertona Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1027.

The type female is in poor condition and contains no locality or collector labels. This is a synonym of *Eurosta comma* (Wiedemann), from the United States.

Trypeta doclea Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1035.

The type female, labeled " Australia,? collector " is in good condition.

This is an Otitidae belonging in the subfamily Platystominae and fitting in the genus *Pogonortalis* Hendel. *P. barbifera* Hendel (1914, *Abh. Zool.-Bot. Ges. Wien*, **8** : 144) is a synonym of *P. doclea* (Walker). I have compared Walker's type with a series of *Pogonortalis barbifera* determined by Hendel from Sydney, N. S. Wales

and from several localities in Queensland and they compare perfectly. See Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**1–2**) : 120) for the synonymy.

Trypeta dorsiguttata Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 119.

The type male is labeled " East Indies, Aru Island, *A. R. Wallace*, ex coll. *W. W. Saunders*, 1868–4 ". It is in fair condition except that one wing is missing.

This is a Lauxaniidae apparently belonging in the genus *Sapromyza* Fallén. *Platystoma basale* Walker (1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 148), from " Makessar ", is a new synonym based upon a comparison of the types.

Trypeta elimia Walker

(Pl. 15, fig. 31)

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1033.

The type female is in poor condition, it is covered with fungus and debris. It is labeled " Philippine Islands, Purch. of *Woods*, B.M. 1845–49 ".

Walker described this as a *Trypeta* belonging in his group *Anomoia*. *Anomoia* Walker has been badly confused in the literature and no clear concept of this group has been proposed to date. I have made a rather detailed study of *Anomoia* and related genera and am preparing a revision which should clarify the generic concepts. In light of my study I would place the species in question under the new combination *Anomoia* (*Euleia*) *elimia* (Walker). This is a synonym of *Anomoia* (*Euleia*) *fossata* (Fabricius) (1805, *Syst. Antl.*, p. 320, as *Tephritis fossatus*). See Shiraki (1933, *Mem. Fac. Sci. Agric. Taihoku Imp. Univ.* **8** (**2**) : 169). This fits my concept of *Hendelina* Hardy (change of name for *Pseudopheniscus* Hendel—this will be a new synonym of *Anomoia* (*Euleia*) Walker). In my key to the known Pacific species (Hardy, 1951, *Pac. Sci.* **5** (**2**) : 179–180) it runs to couplet 2 and would separate at this point by having the first two costal cells of the wing predominantly hyaline and by having an oblique streak extending through cell R5. It is a rather small predominantly subshining black species. The front is entire yellow, measured from the lower ocellus to the lunule it is slightly more than one-half longer than wide. There are three pairs of inferior fronto-orbital bristles and two pairs of superior fronto-orbitals. The face is entirely yellow. The antennae are yellow, the third segment appears to be slightly tinged with brown (the coloration is mostly obscured by the fungus growth). The thorax, scutellum, and halteres are entirely black. The legs are predominantly brown. The abdomen is entirely subshining black. The ovipositor is black, the basal segment, *in situ*, is about two-thirds as long as the fifth abdominal segment. Wings with a brown streak extending out along vein Cu1 + 1st A almost to the wing margin (Pl. 15, fig. 31).

Length : Body and wings, 3·6 mm.

Osten Sacken (1882, *Deutsche Ent. Zeits.* **26** : 227) said " *Ortalis regularis* Dol. 3 Bijdr. 47 (Amboina) is the same species ". I cannot confirm this.

Trypeta ferruginea Walker

1852, *Ins. Saunders.* **1** (**4**) : 387.

The original description said the species was described from the " East Indies ". The type female is in the collection labeled " India *W. W. Saunders*, B.M. 1868–4 ". It is in fairly good condition.

This is a Pyrgotidae and apparently belongs to the genus *Tephritopyrgota* Hendel (new combination) ; this does not seem to fit any species which I can find in the British Museum collection.

Descriptive Notes Based Upon the Type

A moderately large almost entirely rufous species. *Head :* All yellow to rufous with no brown to black spots. The upper portions of the occiput are indistinctly colored with brown. *Thorax :* With four moderately strong marginal bristles on the scutellum, plus the numerous hairs on the disc. Just two pairs of dorsocentral bristles are developed, these are situated rather close together near the hind portion of the mesonotum ; the hind pair of bristles is situated slightly in front of a line between the postalars and they are about equal in size to the postalars and to the scutellar bristles ; the front pair of dorsocentrals is rather small, more hairlike, not more than two times longer than the longest hairs on the mesonotum. The mesonotum is predominantly red, tinged with brown and has three median, yellow, longitudinal vittae extending the full length. The humeri and the front margin of the mesonotum are also yellow and a yellow spot is situated on the sides just above the anterior supraalar bristle and behind the suture. *Wings :* Predominantly dark fumose, rather indistinctly spotted with hyaline marks. A rather broad hyaline mark extends from the costa just beyond the apex of vein R1 to vein M1 + 2. The spot extends rather indistinctly through most of cell 1st M2 but is discolored with irregular pale brownish spots. The ovipositor is longer than the entire abdomen.

Length : Body, excluding ovipositor, 9·2 mm.; ovipositor, 3·2 mm.

Trypeta impleta Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 120.

The type female is present from Aru Island. This is a Lauxaniidae apparently belonging to the genus *Sapromyza* Fallén.

Trypeta lativentris Walker

(Pl. 16, fig. 32)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 158.

The type male is in fairly good condition. It is labeled " Celebes, Macassar, *W. W. Saunders*, B.M. 1868–4 ".

This is a Trypetinae belonging to the genus *Xarnuta* Walker. It is related to *X. morosa* de Meijere (1914, *Tijds. v. Ent.* **57** : 198, pl. 5, fig. 10), but differs by having

the costal cells dark brown fumose (not with second cell largely hyaline) ; by having no hyaline streak through the middle of the wing inside the r-m and m crossveins, and the other wing markings are quite different (compare Pl. 16, fig. 32 and de Meijere's fig. 10). Vein R2 + 3 is wavy in *lativentris* and in de Meijere's figure of *morosa* it is straight. The r-m crossvein in *lativentris* is situated at the apical third of cell 1st M2, not before the middle of the cell and the wing is also narrower, more pointed.

Descriptive Notes Based Upon the Type

Head : The front is rather narrow, it is slightly more than two times longer than wide and has three rather strong, downcurved, inferior fronto-orbital bristles and two pairs of superior fronto-orbitals. The front and face are entirely yellow, the former is tinged slightly with brown. The genae are discolored with brown. The antennae are yellow, tinged with reddish brown, the third segment is slightly more than twice as long as wide and extends over half the length of the face. The arista is very short plumose, the longest hairs are not more than one-fourth the width of the third antennal segment. *Thorax :* Predominantly subshining brown to black. The humeri, upper front margins of sternopleura, the hypopleura and the lateral margins of the mesonotum, from the suture to the sides of the scutellum, are yellow. Eight strong scutellar bristles are present and the disc is densely covered with short, recumbent setae. The scutellum is predominantly yellow, faintly brownish tinged on the dorsum. *Wings :* As in Pl. 16, fig. 32, almost completely brown. The costal cells are brown and are densely covered with microtrichia. The radial vein is setulose almost to the base of the wing. The stem of the radial sector is bare. Vein R2 + 3 is moderately undulate. *Abdomen :* Short and broad, scarcely longer than wide. It is almost entirely rufous with brownish discolorations in the middle of the terga. The lateral margins are densely covered with moderately strong, black bristles and hairs.

Length : Wing, 5·5 mm.; body, 6·0 mm.

Trypeta lutescens Walker

1857, *Trans. Ent. Soc. Lond.* **4** : 41.

The type is labeled " Amazon, Brazil ". This is a new synonym of *Hexachaeta eximia* (Wiedemann) (1830, *Auss. Zweifl. Ins.* **2** : 477) based upon examination of specimens in the British Museum collection.

Trypeta melaleuca Walker

1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 238.

The type male is labeled " Ceram, E. Indies, *W. W. Saunders*, 1868–4 " and is in good condition.

This is a synonym of *Sphaeniscus sexmaculatus atilia* (Walker), see under *Trypeta atilia* Walker.

Trypeta multistriga Walker

(Pl. 16, fig. 33)

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 119.

The type female labeled " East Indies, Aru Island, *W. W. Saunders*, B.M. 1868–4 " is in poor condition ; the head is missing.

This apparently belongs in the genus *Neothemara* Malloch (new combination), it fits Malloch's concept (1939, *Proc. Linn. Soc. N. S. Wales*, **64 (3–4)** : 433) by having the radial sector setose (stem of the second and third vein). Except for this character it would fit fairly close to *Rioxa* Walker and *Acanthoneura* Macquart. *Neothemara multistriga* (Walker) is related to *N. formosipennis* (Walker) but differs by having two hyaline spots in cell R1 and one in cell R3 (Pl. 16, fig. 33, *cf.* Malloch, *loc. cit.*, fig. 10) ; by having two pairs of brown to black spots on the mesonotum, between the presutural and scapular bristles, rather than with a pair of dark stripes and by having the scutellum all yellow, rather than with a black spot on each side.

Descriptive Notes on the Type

Thorax : Very distinctly marked, principally yellow, with the following brown to black marks : two small submedian spots situated behind the inner scapular bristles ; a short black stripe extending over the lower portion of each notopleuron ; a narrow brown stripe situated above the wing base extending from the suture to the anterior corner of the thorax ; a moderately large submedian spot on each side behind the suture and a narrow longitudinal black stripe beginning at the level of the anterior supraalar bristle and extending on a line with the dorsocentral bristle to the hind margin of the mesonotum where it is extended along the margin. *Wings :* As in Pl. 16, fig. 33. Vein R2 + 3 is just slightly undulated.

Trypeta mutyca Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1036.

The type male is in good condition, it is labeled " East Indies, Moulmein, Purch. from *Archdeacon Clerk*, B.M. 1843–431 ".

This has been placed in the genus *Rioxa* Walker by Bezzi (1913, *Mem. Ind. Mus.* **3** : 112) ; it properly belongs, however, in *Acanthoneura* Macquart (new combination) and is a new synonym of *Acanthoneura vaga* Wiedemann (1830, *Auss. Zweifl. Ins.* **2** : 490) based upon a study of specimens in the British Museum collection.

This is a predominantly yellow species. The abdomen is brown with the apices and anterior median portions of terga one to three broadly yellow, the yellow marking of the first segment extends longitudinally down the middle of the abdomen to the apex of the third. For the wing pattern see Bezzi, *loc. cit.*, figs. 22–23.

Trypeta nigrifascia Walker

(Pl. 16, fig. 34)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 158.

The type male labeled " Celebes Makessar, *W. W. Saunders*, B.M. 1868–4 " is in fair condition.

This belongs in the genus *Carpophthorella* Hendel (new combination) and is related to *C. magnifica* Hendel, from Formosa. It differs by having the legs all rufous and the thorax rufous except for the black hind margins of the mesonotum ; rather than having the middle and hind femora brown on their apical portions and the thorax shining black.

Descriptive Notes Based Upon the Type

Head : Front nearly two times longer than wide with six rather strong black inferior fronto-orbital bristles and two superior fronto-orbitals. Head entirely yellow except for the eyes. Arista long plumose, the hairs are much longer than the width of the third antennal segment ; the third segment is about three times longer than wide and is rounded at apex. *Thorax :* Almost entirely rufous. Mesonotum with a broad, shining black, band across the hind portion and covered with short yellow hairs, the bristles are all black. The pleura are entirely yellow to rufous with no dark markings. The scutellum is yellow and the metanotum is black. *Legs :* Entirely yellow. *Wings :* As in Pl. 16, fig. 34. The basal portion of the radial cell is haired slightly in front of the humeral crossvein. The radial sector is bare. The costal margin has a hyaline spot at the middle of cell R1 and another at the middle of cell R3. Vein R4 + 5 is strongly bent upward in the middle between the r-m crossvein and the apex (Pl. 16, fig. 34). The cubital cell has a rather long lobe at the lower apex, this is approximately three times the length of the vertical section of vein Cu1. *Abdomen :* Entirely rufous with no dark markings, rather thickly covered with recumbent, short yellow to rufous hairs and with a clump of black bristle-like hairs on the lateral margins of the second tergum and a few scattered bristles at the sides of the other terga.

Length : Wings, 6·4 mm.; body, 6·0 mm.

Trypeta poenia Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1025.

The type female is in fair condition, one wing is missing. It is labeled " Australia, ? collector ".

This is a Tephritinae belonging in the genus *Tephritis* Latreille (new combination). *Tephritis pelia* Schiner (1868, *Reise Novara, Zool.* **2**, 1 *abt., B. Diptera,* p. 271) is a new synonym. Based upon a study of material in the British Museum collection. For a rather complete description and wing figure (as *T. pelia*) refer to Malloch

(1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 461–462, pl. XI, fig. 24). Walker's type fits this description in all details.

Trypeta pornia Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1039.

The type female is in poor condition, it is badly rubbed, most of the bristles are gone and a portion of the thorax has been damaged by the nadel. It is labeled just " [18] 44 : 105 ". According to the original description this specimen was from " Port Stephen, New Holland " (Australia).

This is a *Rioxa* Walker *sens. lat.* and is the subgenotype of *Rioxa* (*Dirioxa*) Hendel. I have confirmed the synonymy of *Trypeta musae* Froggatt (1899, *Agr. Gaz. N. S. Wales*, **10** : 501) by comparison of specimens in the British Museum collection. The *Rioxa* complex has been badly confused in the literature and needs revision. From the studies I have made towards this end it is obvious that *Dirioxa* Hendel is a good genus, quite distinct from *Rioxa*. It actually fits much closer to *Acanthoneura* Macquart and is differentiated by having two pairs of inferior fronto-orbital bristles, rather than one ; by having the disc of the scutellum entirely bare, rather than with at least a few short hairs on the sides and by having the arista haired only on the top edge, rather than being plumose.

In view of my findings I am treating this species under the new combination *Dirioxa pornia* (Walker).

Descriptive Notes Based Upon the Type

Head : Besides the two pairs of inferior fronto-orbital bristles there are two pairs of superior fronto-orbitals, all are moderately strong. The lowest superior is situated just above the middle of the front, the upper inferior is situated just below the middle. The ocellar bristles are small, rather hairlike. The front is straight on the upper two-thirds, as seen in direct lateral view ; the lower portion is moderately produced into a small bump on each side above the oral margin. The oral margin is also slightly produced. The occiput is moderately swollen below, at its broadest point it is about half as wide as the eye. There are no strong bristles on the sides of the face, only a few short, inconspicuous hairs. The genal bristles are about the size of those in the occipital row. The third antennal segment is slightly less than two times longer than wide and is rounded at apex. The under portion of the arista is bare except for a few short, pubescent-like hairs near the base ; the upper portion is long haired. *Thorax :* Two pairs of dorsocentral bristles are present ; the hind pair is rather weak and is situated near the hind margin of the mesonotum in line with the prescutellar bristles ; the front pair is situated about halfway between the anterior and posterior supraalars. The mesopleura each have two bristles on the hind margin. The pleurotergite is bare. The mesonotum is rather thickly covered with short, recumbent, dark colored setae but the scutellum is entirely bare except for the six marginal bristles ; the intermediate pair is about as strong as the inner postalars. *Legs :* The front femur has a row of three moderately strong bristles on the posteroventral surface at apical third. The middle tibia has just one strong black apical

spur. *Wings:* Vein R1 enters the costa at a point approximately opposite the r-m crossvein. The third section of the costa is approximately two-thirds as long as the second. The r-m crossvein is situated at the apical two-thirds of cell 1st M2. The fourth section of the costa is two times longer than the fifth. The cubital cell has a moderately developed, pointed lobe at apex below, this is slightly longer than the vertical section of vein Cu1. Vein R1 is setulose to its base, the node is entirely bare. Vein R4 + 5 is setulose to its base. The radial sector is bare. The other veins are devoid of setae. Vein R2 + 3 is entirely straight. For further details and for drawings of the wings and the ovipositor see Hardy (1951, *Pac. Sci.* **5** : 185).

Trypeta retorta Walker

1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 16.

The type female is in good condition. It is labeled " East Indies, Gilolo, *W. W. Saunders*, B.M. 1868–4 ".

This species belongs in the genus *Carpophthorella* Hendel (new combination) and is apparently related to *C. setifrons* Malloch because of the more numerous inferior fronto-orbital bristles (eight pairs) and the uniformly brown costal margin of the wing, with no hyaline marks before the apex of vein R2 + 3. It differs from *setifrons* by having the middle and hind femora chiefly brown to black, rather than all rufous ; by having the thorax predominantly black, rather than rufous ; by having the first two abdominal terga yellow, in the female, and the other terga all black, rather than having all terga black on the sides and hind margins and otherwise rufous ; also it differs by having the ovipositor equal in length to abdominal segments three to five inclusive, rather than equal to segment four plus five.

Carpophthorella magnifica Hendel (1915, *Ann. Mus. Nat. Hung.* **13** : 449) is obviously very close to, if not the same as, *retorta*. The differences seem rather trivial and may be of no value. *C. magnifica* seems to differ by having only six to seven pairs of inferior fronto-orbital bristles rather than eight pairs and by having the brown marking on the costal margin not so intense and with a hyaline spot present just beyond the apex of vein R1 and another indistinct spot in cell R3 (Hendel, *loc. cit.*, pl. IX, fig. 15).

Descriptive Notes Based Upon the Type

Head: Front nearly two times longer than wide with eight black inferior fronto-orbital bristles. Head entirely yellow except for some brown discolorations at the upper portion of the occiput behind the upper corner of the eyes. *Thorax:* Mesonotum chiefly shining black, with a black median portion, triangular in shape, extending to the front margin between the inner scapular bristles. The front portion and the portion between the black central mark and the sides are yellow-red tinged with brown. The humeri are yellow. The notopleura are black. The mesonotum is covered with short, black hairs ; the bristles are all black. The humeri and the pleura are chiefly pale pilose, the former have a few short black hairs on the upper portions. The propleura and the upper three-fifths of the mesopleura, the hypopleura and the

pleurotergites are yellow ; the remainder of the pleura are brown. The metanotum is dark brown to black with two rufous spots. *Wings :* Almost identical with those of *C. setifrons* Malloch (1939, *Ann. Mag. Nat. Hist.* (**11**) **4** : pl. XI, fig. 21). The wings are also very similar to those of *C. nigrifascia* (Walker, 1860) but are much darker colored and the pale areas along the costa are indistinct. It is possible that these details are insignificant and *nigrifascia* may be the male of *retorta*. *Legs :* The entire front legs and all tibiae and tarsi are yellow to rufous. The front femora are rather thickly bristled, they have a row of rather strong yellow bristles on the ventral surface with a few black bristles intermixed and have scattered black bristles intermixed with a few yellow-brown ones around the lateral and dorsal surfaces. The mid and hind femora are almost entirely dark brown to black with two rows of black and brown bristles intermixed extending over the ventral surface. *Abdomen :* Entirely black except for the first two terga which are yellow with a narrow black posterior border on the second. The ovipositor is black ; the basal portion *in situ* is equal in length to terga three to five.

Length : Wings, 7·25 mm.

Trypeta roripennis Walker

1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 131.

The type female is in very poor condition, the head, abdomen and most of the legs have been broken off and the wings are bent downward so that it is difficult to see all of the details. The type is labeled " East Indies, Aru Island, *W. W. Saunders*, B.M. 1868–4 ".

This is a Lauxaniidae which I cannot place to genus because so many of the structural details are missing. It is probably a *Sapromyza* Fallén, although I can find but two dorsocentral bristles. It is somewhat like *Sapromyza cirrhicauda* Bezzi as figured by Bezzi (1928, *Dipt. of the Fiji Islands*, p. 130). The wing is dark brown, densely covered with small yellow to hyaline spots, rather evenly scattered over the entire wing surface and in the following arrangement : Cell R1 contains 9 spots ; cell R3 about 22 spots ; the basal section of cell R5 before the r-m crossvein contains 3 pale spots and the apical portion contains 17 ; cell 1st M2 contains about 12 pale spots ; second M2 has 5 and cell M4 has 8 distinct spots. The apical portion of cell R5 is entirely clear (a hyaline mark extends over the narrow apical margin). The thorax is almost entirely dark brown with the anterior median portion of the mesonotum rufous, lightly tinged with brown ; this pattern extends out at the sides into a brown spot behind each humerus, and extends posteriorly a short distance toward the suture. On this specimen I find but two pairs of dorsocentral bristles and one pair of prescutellar bristles. The scutellum has four strong marginal bristles and the disc is densely covered with short, black recumbent setae. The humeri are yellow rufous in ground color, lightly tinged with brown. The sides of the metanotum are rather faintly tinged with yellow to rufous. The pleurotergite and metanotum are brownish yellow. The legs which are present are all brown to black except for the yellow-white tarsi.

Length : Wing, 4·8 mm.

Trypeta rudis Walker

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.

The type female labeled " Borneo, *W. W. Saunders*, B.M. 1868–4 " is in very poor condition. The wings are missing, the thorax is damaged by the nadel and the entire body is covered with debris.

This is a Trypetinae belonging in the Euphrantini and apparently fitting in *Euphranta* (*Staurella*) Bezzi (new combination), I cannot be positive of this placement, however, because of the poor condition of the specimen. The following details would seem to fit it under my concept of the above group. The head has one pair of superior fronto-orbital bristles situated at upper third of the front and two pairs of inferior fronto-orbitals, the upper pair situated fairly close to the superiors. The pleurotergite is covered with fine, pale hairs. Prescutellar bristles are present. The dorsocentrals are situated slightly behind a line drawn between the anterior supraalars. The humeral and sternopleural bristles are present but there is no presutural bristle.

In addition to the above characters :

Head : Front about one-half longer than wide, and slightly discolored with brown in the median portion. The face is entirely yellow and distinctly concave from lateral view. The first two antennal segments are yellow, tinged with brown. The third is yellow and is approximately four times longer than wide, almost equal in length to the face. The arista is plumose, the longest hairs are nearly equal to the width of the third antennal segment. All head bristles are black. The genal bristle is very strong, it is equal in size to the inferior and superior fronto-orbitals. Occiput dark brown to black except on the upper median portion. Vertex entirely yellow. *Thorax :* Predominantly dark brown to black with a yellow mark beginning on the upper third of the mesopleura and extending onto the mesonotum over the suture, these marks extend approximately one-third the distance across the mesonotum on each side. Mesonotum also with a yellow spot on each side just in front of the prescutellar bristle. (This may be a continuous yellow spot, the thorax is damaged at this place.) Scutellum with four strong marginal bristles and with a dark brown to black spot at its base extending nearly half the length, the remainder is yellow. Metanotum black. *Legs :* Front femora each with a brown spot on posterior surface near apical third, otherwise femora all yellow. The middle and hind tibiae and tarsi are brown ; the front are yellow, lightly tinged with brown. *Abdomen :* Predominantly dark brown to black ; the basal portion of the first tergum is yellowish ; the sides and apical corners of the fourth tergum are yellow ; the fifth is predominantly yellow with a brown to black spot in the middle ; the sixth tergum is all yellow. Ovipositor yellow, broken on the type.

Length : Body, not including ovipositor, 7·25 mm.

Note : Walker described the wings as " nearly limpid, with two brown bands, the interior one abbreviated hindward ; veins black, testaceous at the base ".

Trypeta sarnia Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1029.

The type female is labeled " Locality?, ex coll. *W. W. Saunders* ".

This is a Tephritinae belonging to the genus *Paracantha* Coquillett. It is in the British Museum as a synonym of " *Carphotricha culta* Wiedemann (1830, *Ausser. Zweifl. Ins.* **2** : 486). This is the type of the genus *Paracantha* and the synonymy has apparently not been recorded in the literature. Walker's specimen probably came from the United States, the species ranges through southern U.S.

Trypeta culta Loew (1862, *Smiths. Inst. Misc. Coll.* **6** (**1**) : 58, 94, pl. 2, fig. 19) (= *Paracantha cultaris* Coquillett, 1894, *Can Ent.* **26** : 72) is evidently a distinct species and ranges through Mexico, Central America and the Pacific coast of America.

Trypeta signifacies Walker

(Pl. 16, fig. 35)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 165.

The type male labeled " East Indies, Moluccas, Amboyna, *W. W. Saunders*, B.M. 1868.4 " is in good condition except that the head is missing.

This is an Otitidae, apparently belonging in the genus *Dasyortalis* Hendel. It does not, however, fit any of the species in the British Museum collection. The mesonotum and scutellum are black, faintly metallic blue-green. The pleura are dark brown ; the upper margin of the mesopleura and the upper portion of the pteropleura are yellow. The front and middle femora are brown above, yellow on the venter. The hind femur is all brown except for the narrow apex. The tibiae and tarsi are yellow. The abdomen is entirely shining black. Wings as in Pl. 16, fig. 35. The subcostal vein curves up sharply at a right angle at its apex (tephritid-like). Vein R1 is setulose to its base. The radial sector is not setulose. Vein R4 + 5 is setulose throughout and the base of vein Cu1 has setae over its entire length to the m-cu crossvein. The cubital cell is truncate at apex (Pl. 16, fig. 35).

Trypeta sinica Walker

1857, *Trans. Ent. Soc. Lond.* **4** (**5**) : 229.

The type specimen is evidently from the " Amazon, Brazil ", Walker was in error when he recorded the type as being from China. This is in the collection as a synonym of *Hexachaeta eximia* (Wiedemann) (1830, *Ausser. Zweifl. Ins.* **2** : 477), this is apparently a new synonym.

Trypeta stella Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1030.

The type male labeled " India, N. Bengal, *Lieut. Campbell*, B.M. 1812–25 " is in good condition. One paratype labeled " India, *W. W. Saunders*, B.M. 1868–4 " is in poor condition, it is covered with fungus.

This is a Tephritinae belonging in the genus *Platensina* Enderlein, 1911 (*Tephrostola* Bezzi, 1913 is a synonym) and *stella* Walker is a new synonym of *P. acrostacta* (Wiedemann) (1824, *Anal. Entom.* **54** : 119), based upon a comparison of specimens in the British Museum collection. For an adequate description (as *Tephrostola acrostacta* (Wiedemann) refer to Bezzi (1913, *Mem. Ind. Mus.* **3** : 153, pl. X, fig. 57).

Trypeta stellipennis Walker

(Pl. 16, fig. 36)

1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 159.

Walker indicated a male and a female in his original. The specimen marked type is a male labeled " Macassar, Celebes, *A. R. Wallace*, ex coll. *Saunders* 68.4 ". It is in good condition. Two other specimens are in the collection under *stellipennis* from " Ternate " and " near Macassar, *A. R. Wallace*, 58.142X ". The latter two were incorrectly placed and are specimens of *Hexacinia punctifera* (Walker).

T. stellipennis is a Trypetinae belonging in the genus *Hexacinia* Hendel (new combination). This was treated as a synonym of *Acinia stellata* Macquart by Enderlein (1911, *Zool. Jahrb. Syst.* **31** : 433). This synonymy is not correct. (*Note : Hexacinia radiosa* (Rondani) is the correct name for *stellata* Macquart since *Acinia stellata* is preoccupied.)

Hexacinia stellipennis is related to *H. stigmatoptera* Hendel, from the Philippine Islands, and differs as follows : By having nine or more brown to black spots on the pleura, rather than pleura with no distinct spots ; by having the wing bases entirely brown fumose, no distinct hyaline spot at the base of cell R1 ; by having the hyaline spot beyond the middle of cell R1 rectangular in shape (Pl. 16, fig. 36) ; rather than having the wing base subhyaline and marked quite differently from above; and also by having the fifth tergum of the male entirely rufous, rather than all black except for a yellow spot in the middle. For details of the wings see Pl. 16, fig. 36.

Length : Wing, 6·0 mm.

Trypeta subocellifera Walker

1839, *Jour. Proc Linn. Soc. Lond.* **3** : 120.

The type male is in poor condition, the abdomen and one hind leg are missing. It is labeled " East Indies, Aru Island, *A. R. Wallace*, ex coll. *W. W. Saunders*, 68.4 ".

This is a Lauxaniidae in the collection under *Sapromyza* Fallén. *S. pulcherrima* Kertesz (1900, *Termes. Fuzetek*, **23** : 258) is listed as a synonym.

Trypeta transiens Walker

(Pl. 16, fig. 37)

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 164.

The type is in such poor condition that the sex cannot even be ascertained, the abdomen, one wing, the hind legs, one middle leg and a portion of the thorax are missing. It is labeled " East Indies, Moluccas, Amboina Island, *W. W. Saunders*, B.M. 1868–4 ".

This is a Trypetinae belonging in the genus *Euphranta* Loew. It is distinct from anything in the British Museum collection or any species known to me. It is characterized by the wing markings as shown in Pl. 00, fig. 37 ; the hyaline mark at the tip of cell R5 bisecting the yellow-brown fumose band around the wing tip characterizes this from other species.

Descriptive Notes Based Upon the Type

Head : Three pairs of rather well-developed inferior fronto-orbital bristles are present on the right side of the front, on the left side four pairs are present (an extra bristle is developed near the lower part of the front). The frontal bristles more nearly place this in Malloch's genus *Cyclopsia*, in his key (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 441) it would run to this genus except that the inferior fronto-orbitals are not weak. The upper pair, however, is well spaced from the superior fronto-orbital bristles, the distance between these two bristles is almost as great as that between the superior fronto-orbitals and the vertical bristles. The front is about one-third longer than wide, measured from the lower ocellus to the lunule and is predominantly black, the lower margin is yellow ; the upper orbits are also yellow. The vertex is yellow, as are the face, genae and lower occiput. The basal antennal segment is rufous ; the third segment is reddish brown. The arista is short plumose, the longest hairs are about equal to half the width of the third antennal segment. The third is about two and one-half times longer than wide and extends approximately to the oral margin, the apex is rounded. *Thorax :* Predominantly dark brown to black in ground color ; chiefly gray pollinose on the dorsum, especially down the median portion and over the suture and the hind portion. The median posterior portion of the mesonotum is yellow, just before the scutellum. The notopleural callus and the humeri, except for the front margins are yellow ; the anterior portion of each humerus is brown ; the hypopleura are yellow ; the pleura are otherwise brown. The pleurotergite is densely covered with long, fine hair. The scutellum is all yellow and has four strong, marginal bristles. The dorsocentral bristles are placed about halfway between the anterior supraalar and the inner posterior supraalar bristles. The prescutellar bristles are lacking and there are no presutural bristles. *Legs :* The front legs are predominantly rufous, lightly tinged with brown on the tibiae and tarsi. The middle legs are chiefly brown to black, the dorsal surface and the apical third of each femur are yellow, the apex of the tibia and the basitarsus is tinged with yellow. *Wings :* As in Pl. 16, fig. 37. The setae

on vein R1 extend a considerable distance beyond the humeral crossvein (about one-third the distance to the base of the vein). R4 + 5 is setulose to just beyond the r-m crossvein. The radial sector is bare. The r-m crossvein is situated at about the apical three-fifths of cell 1st M2.

Length of wing : 6·0 mm.

Trypeta tubifera Walker

1857, *Trans. Ent. Soc. Lond.* **4** (5) : 230.

The type female is labeled " China, B.M. 68.4 " but this is obviously an error. This is an *Anastrepha* Schiner and has been treated under this combination by Stone (1942, *U.S.D.A. Misc. Pub.* **439** : 49). He said that " the species most closely resembles certain Antillean species, and it is not improbable that it actually came from the West Indies ".

Refer to Stone (*loc. cit.*) for a description of the species and for figures of the wings and the ovipositor (pl. 8, fig. D and pl. 23, fig. D).

Trypeta tucia Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1021.

The type female is in very poor condition, the head, abdomen and some of the legs are missing and the thorax is covered with fungus. It is labeled " India, N. Bengal, ? collector ".

This is a Trypetinae belonging in the genus *Sphaeniscus* Becker (*Spheniscomyia* Bezzi, 1913, was an invalid emendation. See Hardy, 1955, *Pac. Sci.* **9** (1) : 77) and is a synonym of *S. quadrincisa* (Wiedemann) (see Bezzi, 1913, *Mem. Ind. Mus.* **3** : 147). Bezzi discusses this species and figures the wing (pl. X, fig. 52).

Urophora fasciata Walker

(Pl. 16, fig. 38)

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 134.

The female specimen in the collection labeled " Type?", " SAR " [for Sarawak, Borneo] and with the handwritten label " *fasciata* " is obviously the type. It is in fair condition except that the antennae are missing.

This is a Trypetinae which apparently belongs in the genus *Gastrozona* Bezzi, as defined by Malloch (1939, *Proc. Linn. Soc. N. S. Wales*, **64** (3–4) : 442). I see no way to separate *Carpophthoromyia borneensis* Hering (1952, *Treubia*, **21** (2) : 283, fig. 12) from *Gastrozona fasciata* (Walker) (new combination) and on the basis of Hering's description and figure I consider them synonymous. At the present time I see no real justification for considering this species in *Carpophthoromyia* until the group can be more thoroughly studied. *Gastrozona* may prove to be a synonym

of *Carpophthoromyia*; the only good structural differences which I have noticed are that the ocellar bristles are small, poorly developed and the arista is long plumose in the *Gastrozona* which I have studied, from the Orient and Pacific, and the ocellar bristles are very strongly developed and the arista short haired in the specimens of *Carpophthoromyia* which I have seen, from Africa. The two groups also differ strikingly in body coloration and wing markings. I do not consider the characters used by Hendel (1914, *Wien. Ent. Zeit.* **33** : 80) of particular importance in separating these two.

Descriptive Notes Based on the Type

Head : Two pairs of inferior fronto-orbital and two pairs of superior fronto-orbital bristles present. All of the frontal bristles are strong, the upper inferior fronto-orbital is situated near the middle of the front ; the lower superior fronto-orbital is at the upper third of the front. The ocellar bristles are very tiny, hairlike. The front is about one-third times longer than wide and is entirely yellow. The face is all yellow and is very slightly concave in profile. A brown spot is present on each of the genae. The epistoma is just slightly protruded. The lower portion of the occiput is puffed, at its broadest point it is approximately two-thirds as wide as the eye ; the occiput has a brown to black spot at each upper corner along the eye margin. *Thorax :* Mesonotum entirely polished blue-black. The dorsocentral bristles are situated on a line between the anterior supraalars. The prescutellar bristles are situated on a line with the postalars. The humeri are largely dark brown to black with a narrow ring of yellow around the margins. The mesopleura and hypopleura are yellow ; the pleura are otherwise dark brown to polished black. The scutellum is yellow with a black spot on each side of the margin just below the lateral bristles and with a black spot at apex just below the apical bristles. Metanotum entirely black. *Legs :* The front legs, except the coxae, are entirely yellow to rufous. The middle femora are predominantly brown, the hind femora are largely yellow, discolored with brown at the apical third. The tibiae and tarsi are all yellow. The middle tibia has two large black spurs at the apex. *Wings :* The extreme base of the wing is hyaline. The veins are white. The remainder of the wing is predominantly dark brown fumose with a hyaline streak originating at the hind margin in the anal cell, extending across the cubital vein, the median veins up to vein R4 + 5 and then bent downward and extending back to the wing margin through cell 2nd M2 ; another hyaline streak extends obliquely through the apex of cell R5 (Pl. 16, fig. 38). Cell R1 has three hyaline spots on costal margin and a thin hyaline streak is present along the costa in cell R3 and at apex of R1. Vein R1 is densely haired to the node and a few setae extend below this point about halfway to the base. Vein R4 + 5 is setulose to its base. The radial sector is bare. Vein M3 + 4 is bare but vein M1 + 2 has scattered setae extending from the base to the r-m crossvein. Vein R2 + 3 is straight, or nearly so. Vein R4 + 5 is rather arcuate on the last section. The fifth section of the costa is slightly more than half the length of the fourth. The cubital cell has a slender, rather elongate lobe at its apex below (Pl. 16, fig. 38). *Abdomen :* Predominantly shining black, rather thickly covered with gray pollen. The apex of the second tergum is yellow. The third is all black,

the fourth and fifth are yellow in ground color, the apical halves of the fourth and fifth are densely covered with white pubescence and white pile. The sixth tergum is black with a narrow rim of yellow at the apex. Ovipositor black, the basal portion, *in situ*, is equal in length to segments three to six.

Length : Wing, 7·0 mm.

Xarnuta leucotelus Walker

(Pl. 16, fig. 39)

1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 28.

The type male labeled " Singapore, A. R. Wallace, 55–9 " is in fair condition. Two other specimens are in the collection, one from " Aru Island, A. R. Wallace, 58–48 " and one from " Java, Hon. E. Ind. Coy, 51.112 ".

This is the type of the genus *Xarnuta* Walker and was described as a " Helomyzides ". The species is very well defined, it is distinguished from other known *Xarnuta* by the evenly brown fumose wings, with no evidence of transverse fasciae or hyaline spots, except for the hyaline apex of cell R5 (extreme apex of wing) (Pl. 16, fig. 39). The hind angle of the wing is slightly paler colored than the remainder, varying from yellow-brown, in the type, to yellow fumose in one of the other specimens. The wings are very broad. The radial vein is setulose well in front of the humeral crossvein. Body almost entirely rufous, with three rather faint narrow vittae extending down the median portion of the mesonotum, one central and two submedian ; these extend from near the front margin to the dorsocentral bristles. Also another faint stripe is present on each side extending from behind the suture to the hind margin. The generic characters are as described for *X. lativentris* (Walker).

Length : Body, 7·25 mm.; wings, 6·7 mm.

CHECK LIST OF THE WALKER SPECIES TREATED IN THIS PAPER, CORRECTED COMBINATIONS

FAMILY CHLOROPIDAE

Genus? *fulvitarsis* (Walker), n. comb.
(Pl. 11, fig. 9)

Dacus fulvitarsis Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 153.
Dacus pallitarsis Walker, cabinet name.

FAMILY LAUXANIIDAE

Sapromyza dorsiguttata (Walker), n. comb.

Trypeta dorsiguttata Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 119.
Platystoma basale Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 148. New synonymy based upon a comparison of the type in the British Museum, from " Makessar ", with the type of *dorsiguttata*.

Sapromyza impleta (Walker), n. comb.

Trypeta impleta Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 120.

Sapromyza subocellifera (Walker)

Trypeta subocellifera Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 120.
Sapromyza pulcherrima Kertesz, 1900, *Termes. Fuzetek*, **23** : 258.

Sapromyza roripennis (Walker), n. comb.

Trypeta roripennis Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 131.

FAMILY OTIDIDAE

Antineura devia (Walker)

Dacus devius Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 250.

Antineura pubiseta (Walker)

Dacus pubiseta Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 294.

Antineura strigifer (Walker)

Dacus strigifer Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 13.

Celetor caerulea (Macquart)

Tephritis caerulea Macquart, 1846, *Dipt. Exot., Suppl.* **1** : 212, pl. 18, fig. 15.
Trypeta cluana Walker, 1849, *List. Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1019.

Cleitamia latifascia (Walker), n. comb.

Dacus latifascia Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 114.

Cleitamia liturata (Walker)

Dacus lituratus Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 251.

Conicipithea addens (Walker)

Dacus addens Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 149.

Dasyortalis signifacies (Walker), n. comb.
(Pl. 16, fig. 35)

Trypeta signifacies Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 165.

Elassogaster sepsoides (Walker)

Dacus sepsoides Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163.

Elassogaster signatipes (Walker)

Dacus signatipes Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163.

Elassogaster sordidus (Walker), n. comb.

Dacus sordidus Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 251.
Dacus varialis Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 123. New synonymy.

Genus? *cylindrica* (Walker)

Trypeta cylindrica Walker, 1852, *Ins. Saunders.* **4** : 380.

Icteracantha chalybeiventris (Wiedemann)

Trypeta chalybeiventris Wiedemann, 1830, *Ausser. Zweifl. Ins.* **2** : 479.
Dacus bicolor Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1071.

Lamprogaster instabilis (Walker), n. comb.

Dacus instabilis Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 250.
Lamprogaster gracilis Hendel, 1914, *Abh. K. K. Zool-Bot. Ges., Wien*, **8** (**1**) : 225. New synonymy.

Lamprophthalma sepedonoides (Walker), n. comb.

Dacus sepedonoides Walker, 1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 228.

Philocompus divergens (Walker)

Dacus divergens Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 149.

Plagiostenopterina basalis (Walker)

Dacus basalis Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1072.

Plagiostenopterina imitans (Walker)

Dacus imitans Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 150.

Plagiostenopterina inaptus (Walker), n. comb.

Dacus inaptus Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 151.

Plagiostenopterina lativentris (Walker), n. comb.

Dacus lativentris Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 115.
Plagiostenopterina (*Stenopterosoma*) *orbitalis* Malloch, 1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**1–2**) : 114. New synonymy.

Plagiostenopterina longivitta (Walker)

Dacus longivitta Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 115.

Plagiostenopterina trivittata (Walker)

Dacus trivittatus Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1072.

Pogonortalis doclea (Walker)

Trypeta doclea Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1035.
Pogonortalis barbifera Hendel, 1914, *Abh. K. K. Zool.-Bot. Ges. Wien*, **7** (**1**) : 144. The type of the genus *Pogonortalis* Hendel.

Pseudepicausta chalybea (Doleschall)

Herina chalybea Doleschall, 1858, *Naturk. Tijds. v. Ned. Indie*, **17** : 125.
Dacus obtrudens Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 116.

Pseudepicausta contrahens (Walker)

Dacus contrahens Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 151. Placed in this combination by Hendel (1914, *Gen. Ins.* **157** : 64).

Pseudepicausta detrudens (Walker)

Dacus detrudens Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 135.

Pseudepicausta exigens (Walker)

Dacus exigens Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 151.

Pseudepicausta experta (Walker)

Dacus expertus Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 14.

Pseudepicausta mutilloides (Walker)

Dacus mutilloides Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 115.

Pseudepicausta pompiloides (Walker)

Dacus pompiloides Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 116.

Rhegmatosaga latiuscula (Walker), n. comb.

Noeeta latiuscula Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.
Rhegmatosaga insignis Frey, 1930, *Not. Ent.* **10** : 63, fig. 8. The type of the genus *Rhegmatosaga* Frey. New Synonymy.

Rivellia distobasalis, n. name.

Trypeta basalis Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 120. *Nomen bis lectum.*

FAMILY PYRGOTIDAE

Campylocera? squalida (Walker), n. comb.
(Pl. 12, fig. 12)

Dacus squalidus Walker, 1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 323.

Tephritopyrgota ferruginea (Walker), n. comb.

Trypeta ferruginea Walker, 1852, *Ins. Saunders.* **4** : 387.

FAMILY TEPHRITIDAE

Acanthoneura vaga (Wiedemann)

Trypeta vaga Wiedemann, 1830, *Ausser. Zweifl. Ins.* **2** : 490.
Trypeta mutyca Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1036. New synonymy.

Adrama determinata (Walker)

Dacus determinatus Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.
Adrama austeni Hendel, 1912, *Wien. Ent. Ztg.* **31** : 12. New synonym. Based upon the comparison of the type male, allotype female and a series of 19 specimens from Borneo and a large series of specimens from Borneo, Java, Malaya, Philippine Islands, Thailand, Burma, Ceylon, and India.

Adrama selecta Walker
(Pl. 11, fig. 2)

Adrama selecta Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 118. Type of the genus *Adrama* Walker.
Enicoptera rufiventris Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 163. New synonymy.
Psila cruciata Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 126. A synonym according to Osten Sacken (1881, *Ann. Mus. Civ. Stor. Nat. Genova*, **16** : 474).

Anastrepha tubifera (Walker)

Trypeta tubifera Walker, 1857, *Trans. Ent. Soc. Lond.* **4** (**5**) : 230.

Anomoia (*Euleia*) *fossata* (Fabricius), n. comb.

Tephritis fossatus Fabricius, 1805, *Syst. Antl.*, p. 320.
Trypeta elimia Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1033.

Callantra smieroides Walker

Callantra smieroides Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 154. The type of the genus *Callantra* Walker.
Callantra smicroides Bezzi, 1916, *Bull. Ent. Res.* **7** : 120.

Carpophthorella nigrifascia (Walker), n. comb.
(Pl. 16, fig. 34)

Trypeta nigrifascia Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 158.

Carpophthorella retorta (Walker), n. comb.

Trypeta retorta Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 16.

Clusiosoma lateralis (Walker), n. comb.

Dacus lateralis Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 123.
Clusiosoma biseriata Malloch, 1939, *Jour. Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 426. New synonymy.

Curticella [N. Genus] *approximans* (Walker), n. comb.
(Pl. 15, figs. 29*a-b*)

Trypeta approximans Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 160. The type of the new genus *Curticella* Hardy.

Curvinervus [N. Genus] *walkeri*, change of name
(Pl. 15, fig. 26*a–b*)

Strumeta concisa Walker, 1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 227. The type of the new genus *Curvinervus* Hardy.

Cyclopsia inscripta (Walker), n. comb.

Dacus inscriptus Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 162.
Cyclopsia inaequalis Malloch, 1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 445. The type of the genus. New synonymy.

Dacus (*Neodacus*) *absolutus* Walker, n. comb.

Dacus absolutus Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 22.

Dacus (*Paradacus*) *areolatus* Walker, n. comb.
(Pl. 11, fig. 3)

Dacus areolatus Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 295.

Dacus (*Strumeta*) *biarcuatus* Walker, n. comb.
(Pl. 11, fig. 4)

Dacus biarcuatus Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 122.

Dacus (*Dacus*) *bivittatus cucumarius* Sack

Dacus cucumarius Sack, 1908, *Ber. Senckenb. Naturf. Ges.*, p. 10.
Dacus pectoralis Walker, 1861, *Trans. Ent. Soc. Lond. n.s.* **5** : 322.

Dacus (*Daculus*) *brevistriga* Walker, n. comb.

Dacus brevistriga Walker, 1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 322.
Dacus katonae Bezzi, 1924, *Bull. Ent. Res.* **15** (**1**) : 86. Probable synonym.
Dacus asclepiadens Bezzi, 1924, *Ann. S. Afr. Mus.* **19** : 468 (synonym according to Munro, 1957, *Brit. Mus. Ruwenzori Exped.* **2** (**9**) : 860).
Leptoxyda brevistriga Malloch, 1932, *Ann. Mag. Nat. Hist. ser.* 10, **10** : 300.

Dacus (*Strumeta*) *cucurbitae* Coquillett

Dacus cucurbitae Coquillett, 1899, *Ent. News*, **10** : 129.
Dasyneura caudata Walker, *nec* Fabricius, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1073. New synonymy.

Dacus (*Neodacus*) *curvifer* Walker
(Pl. 11, fig. 6)

Dacus curvifer Walker, 1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 229.
Dacus speculifer Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 122. New synonymy.

Dacus (*Daculus*) *discipennis* Walker
(Pl. 11, fig. 7)

Dacus discipennis Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 294.

Dacus (*Zeugodacus*) *emittens* Walker

Dacus emittens Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 152.

Dacus (*Paratridacus*) *expandens* Walker

Dacus expandens Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 114.

Dacus (*Didacus*) *fuscatus* Wiedemann

Dacus fuscatus Wiedemann, 1819, *Zool. Mag.* **1** (**3**) : 28.
Dasyneura nebulosa Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1076. New synonymy.
Dacus nebulosa Walker, *nom. nud.*

Dacus (*Strumeta*) *incisus* Walker, n. comb.

Dacus incisus Walker, 1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 323.

Dacus (*Strumeta*) *pectoralis* Walker

Dacus pectoralis Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 114.
Dacus ferrugineus var. *obscurata* de Meijere, 1911, *Tijds. v. Ent.* **54** : 374. A probable synonym.

Dacus (*Paradacus*) *perplexus* Walker
(Pl. 12, fig. 11)

Dacus perplexus Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 14.
Dacus implexus Walker, cabinet name.

Dacus sexmaculatus Walker, sp. indet.

Dacus sexmaculatus Walker, 1871, *The Entomologist*, **5** : 344.

Dacus (*Neodacus*) *strigifinis* Walker, n. comb.

Dacus strigifinis Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 295.
Neodacus lanceolatus Perkins, 1939, *Univ. Queensland Papers, Dept. Biol.* **1** (**10**) : 22, pl. 1, fig. 1. New synonymy.
Dacus (*Chaetodacus*) *albolateralis* Malloch, 1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 413, pl. XI, fig. 2.

Dacus (*Zeugodacus*) *tau* (Walker), n. comb.

Dasyneura tau Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1074.
Dacus hageni de Meijere, 1911, *Tijds. v. Ent.* **54** : 375. New synonymy.
Dacus caudatus var. *nubilus* Hendel, 1912, *Suppl. Ent.* **1** : 16.
Zeugodacus caudatus Perkins, *nec* Fabricius, 1938, *Proc. Roy. Soc. Queensland*, **49** (**11**) : 139.
Zeugodacus nubilus heinrichi Hering, 1941, *Siruna Seva*, **3** : **11**.
Zeugodacus bezzianus Hering, 1941, *Arb. Über Morph. u. Tax. Ent.* **8** (**1**) : 26.

Dacus (*Zeugodacus*) *terminifer* Walker, n. comb.
(Pl. 12, fig. 13)

Dacus terminifer Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 152.

Dacus (*Strumeta*) *umbrosus* Fabricius

Dacus umbrosus Fabricius, 1805. *Syst. Antl.*, p. 274.
Strumeta conformis Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 34.
Dacus diffusus Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 153. New synonymy.

Dimeringophrys bilineatus (Walker), n. comb.
(Pl. 11, fig. 5)

Dacus bilineatus Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 150.
Dimeringophrys ortalina Enderlein, 1911, *Zool. Jahrb.* **13** (**3**) : 452. The type of the genus. New synonymy.

Diplochorda concisa (Walker)

Dacus concisus Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 252.
Dacus turgidus Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 134. Recorded by Osten Sacken (1881, *Ann. Mus. Civ. Stor. Nat. Genova*, **16** : 487).

Dirioxa pornia (Walker), n. comb.

Trypeta pornia Walker, 1849, *List. Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1039.
Trypeta musae Froggatt, 1899, *Agr. Gaz. N. S. Wales*, **10** : 501. The type of *Dirioxa* Hendel.

Enicoptera tortuosa Walker
(Pl. 13, fig. 16)

Enicoptera tortuosa Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 155.

Euphranta? figurata (Walker), n. comb.
(Pl. 11, fig. 8)

Dacus figuratus Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.

Euphranta (*Staurella*) *rudis* (Walker), n. comb.

Trypeta rudis Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 133.

Euphranta transiens (Walker), n. comb.
(Pl. 16, fig. 37)

Trypeta transiens Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 164.

Eurosta comma (Wiedemann)

Trypeta comma Wiedemann, 1830, *Ausser. Zweifl. Ins.* **2** : 478.
Trypeta alvea Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1027.
Trypeta dertona Walker, 1849, *loc. cit.*

Gastrozona fasciata (Walker), n. comb.
(Pl. 16, fig. 38)

Urophora fasciata Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 134.
Carpophthoromyia borneensis Hering, 1952, *Treubia*, **21** (**2**) : 283, fig. 12. New synonymy.

Genus? (near *Acidia*) *contraria* (Walker)
(Pl. 15, fig. 30)

Trypeta contraria Walker, 1853, *Ins. Saunders.* **4** : 385, pl. VIII, fig. 7.

Hemilea bipars (Walker), n. comb.
(Pl. 14, fig. 22)

Sophira bipars Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 23.

Hexachaeta eximia (Wiedemann)

Trypeta eximia Wiedemann, 1830, *Ausser. Zweifl. Ins.* **2** : 477.
Trypeta lutescens Walker, 1857, *Trans. Ent. Soc. Lond.* **4** : 41. New synonymy.
Trypeta sinica Walker, 1857, *Trans. Ent. Soc. Lond.* **4** (**5**) : 229. New synonymy.

Hexacinia punctifera (Walker), n. comb.

Sophira punctifera Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 15.
Hexacinia multipunctata Malloch, 1939, *Proc. Linn. Soc. N. S. Wales*, **64** (**3–4**) : 438, pl. **11**, fig. 13. New synonymy.

Hexacinia stellipennis (Walker), n. comb.
(Pl. 16, fig. 36)

Trypeta stellipennis Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 159.

Neosophira arcuosa (Walker), n. comb.
(Pl. 12, figs. 14*a–b*)

Enicoptera arcuosa Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 156.
Neosophira ferruginea Hendel, 1914, *Abh. K. K. Zool-Bot. Ges. Wien*, **8** (**1**) : 138. New synonymy.

Neosophira distorta (Walker)
(Pl. 14, figs. 24*a–b*)

Sophira distorta Walker, 1857, *Trans. Ent. Soc. Lond. n.s.* **4** : 230. Type of genus *Neosophira* Hendel.
Enicoptera pictipennis Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 155.

Neothemara formosipennis (Walker)

Rioxa formosipennis Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 252. The type of the genus *Neothemara* Malloch.

Neothemara multistriga (Walker), n. comb.
(Pl. 16, fig. 33)

Trypeta multistriga Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 119.

Neothemara repleta (Walker), n. comb.
(Pl. 15, fig. 27)

Strumeta repleta Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 296.

Paracantha culta (Wiedemann)

Carphotricha culta Wiedemann, 1830, *Ausser. Zweifl. Ins.* **2** : 486.
Trypeta sarnia Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1029. New synonymy.

Paraeuphranta [N. Genus] *furcifer* (Walker), n. comb.
(Pl. 12, figs. 10*a–c*)
Dacus furcifer Walker, 1862, *Jour. Proc. Linn. Soc. Lond.* **6** : 14. Type of *Paraeuphrante* Hardy.

Phytalmia nigrilinea (Walker), n. comb.

Dacus? nigrilinea Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 251.
Phytalmia? wollastoni Edwards, 1915, *Trans. Zool. Soc. Lond.* **20** : 418. New synonymy.

Platensina acrostacta (Wiedemann)

Trypeta acrostacta Wiedemann, 1824, *Anal. Entom.* **54** : 119.
Trypeta stella Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1030. New synonymy.

Platensina amplipennis (Walker)
(Pl. 15, fig. 28)

Trypeta amplipennis Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 159.

Polyara insolita Walker

Polyara insolita Walker, 1859, *Jour. Proc. Linn. Soc. Lond.* **3** : 123. The type of the genus and only known species.

Ptilona confinis Walker

Rioxa confinis Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 132.
Rioxa? bimaculata Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 164.
Trypeta basifascia Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 158.
Ptilona brevicornis van der Wulp, 1880, *Tijds. v. Ent.* **23** : 185, pl. **11**, fig. 7. New synonymy. This is the type of the genus *Ptilona* van der Wulp.
Ptilona nigriventris Bezzi, 1913, *Mem. Ind. Mus.* **3** : 110, pl. VIII, fig. 20.
Ptilona armatipes Hering, 1953, *Siruna Seva*, **8** : 4, fig. 4. New synonymy.

Rioxa lanceolata Walker
(Pl. 13, fig. 18)

Rioxa lanceolata Walker, 1857; *Jour. Proc. Linn. Soc. Lond.* **1** : 35, pl. II, fig. 3. The type of the genus *Rioxa* Walker.

Rioxina abbreviata (Walker)
(Pl. 13, figs. 19*a–c*)

Seraca abbreviata Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 117. The type of the genus *Rioxina* Hering.
Rioxa de-beauforti de Meijere, 1906, *Nova Guinea Dipt.* **5** (**1**) : 94, fig. 17. New synonymy.

Seraca concinna (Walker), n. comb.
(Pl. 14, figs. 23*a–c*)

Sophira concinna Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 132.

Seraca plagifera (Walker), n. comb.
(Pl. 13, fig. 15)

Enicoptera? plagifera Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 156.
Sophira bistriga Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 160. New synonymy, *plagifera* is given page priority.
Colobostrella ruficauda Hendel, 1915, *Ann. Mus. Nat. Hung.* **13** : 429. New synonymy.

Seraca signifera Walker

Seraca signifera Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 165. The type of the genus *Seraca* Walker.
Colobostrella ruficauda Hendel, 1914, *Wien. Ent. Zeit.* **33** : 79.

Soita psiloides Walker
(Pl. 14, figs. 21*a–b*)

Soita psiloides Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 136. The type of the genus *Soita* Walker.

Sophira signata (Walker), n. comb.

Seraca signata Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 165.

Sophira venusta Walker
(Pl. 15, fig. 25)

Sophira venusta Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 35. The type of the genus *Sophira* Walker.

Sosiopsila consors (Walker), n. comb.
(Pl. 11, fig. 1)

Adrama consors Walker, *Jour. Proc. Linn. Soc. Lond.* **5** : 296.

Sphaeniscus quadrincisa (Wiedemann)

Trypeta quadrincisa, 1824, *Anal. Entom.*, p. 55.
Trypeta tucia Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1021.

Sphaeniscus sexmaculatus atilia (Walker)

Trypeta atilia Walker, 1849, *List. Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1021.
Trypeta melaleuca Walker, 1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 238.

Tephritis poenia (Walker), n. comb.

Trypeta poenia Walker, 1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1025.
Tephritis pelia Schiner, 1868, *Reise Novara, Zool.* **2**, 1 *abt.*, *B. Diptera*, p. 271. New synonymy.

Themara maculipennis (Westwood)

Achias maculipennis Westwood, 1848, *Cab. Orient. Ent.*, p. 38, pl. 18, fig. 4.
Themara ampla Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 33, pl. 1, fig. 5. The type of the genus *Themara* Walker.

Themarohystris helomyzoides (Walker), n. comb.

Strumeta helomyzoides Walker, 1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 220.
Themarohystris erinaceus Hendel, 1914, *Ann. Mus. Nat. Hung.* **13** : 433. New synonymy. The type of the genus *Themarohystris* Hendel.

Themaroides quadrifera (Walker)
(Pl. 13, fig. 17)

Helomyza quadrifera Walker, 1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 246. The type of the genus *Themaroides* Hendel.
Helomyza optatura Walker, 1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 116.
Themara ampla Doleschall, *nec* Walker, 1859, *Nat. Tijds. Ned. Indie* **17** : 154. *Nomen nudum.*

Trypeta antiqua Walker, sp. indet.

Trypeta antiqua Walker, 1852, *Ins. Saunders.* **4** : 378.

Xarnuta lativentris (Walker), n. comb.
(Pl. 16, fig. 32)

Trypeta lativentris Walker, 1860, *Jour. Proc. Linn. Soc. Lond.* **4** : 158.

Xarnuta leucotelus Walker
(Pl. 16, fig. 39)

Xarnuta leucotelus Walker, 1857, *Jour. Proc. Linn. Soc. Lond.* **1** : 28. The type of the genus *Xarnuta* Walker.

Xanthaciura? basalis (Walker)

Trypeta basalis Walker, 1852, *Ins. Saunders.* **4** : 380.

LIST OF WALKER SPECIES OF FRUIT FLIES WHICH I DID NOT STUDY

The types are in the British Museum, unless otherwise indicated.

Helomyza meritoria Walker

1864, *Jour. Proc. Linn. Soc. Lond.* **7** : 218. Mysol.

Bezzi (1913, *Mem. Ind. Mus.* **3** : 75) said Czerny had studied the type in the British Museum collection and said it " is not a Helomyzid, but a Trypaneid ; from the wing-pattern it seems to be related to *Rioxa* ".

I was unable to locate the type when I was at the British Museum in 1954 but Mr. D. J. Clark of the Diptera section has since located it and said that it runs to this genus in Malloch's key (1939 : 417).

H. nivistriga Walker

1861, *Jour. Proc. Linn. Soc. Lond.* **5** : 246. New Guinea.

Bezzi (1913, *Mem. Ind. Mus.* **3** : 76) said " Czerny in 1904, after examination of the type in the British Museum, has stated that this is not a Helomyzid, but a Trypaneid, and I think that it is probably a *Rioxa* ".

I was unable to locate the type in 1954 but Mr. D. J. Clark has since found it. He reported that the head was missing and that he could not be certain of the genus but that he thinks it is not a *Rioxa.*

H. ortalioides Walker

1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 116.

According to Bezzi (1913, *Mem. Ind. Mus.* **3** : 77) " Czerny, after examining the type in London, states that it is a Trypaneid ".

H. stelliplena Walker

1865, *op. cit.* : 117.

This may possibly be a fruit fly. It is listed in the card file at the British Museum under " Trypetidae genus?" but I did not study the type. Mr. Clark reports that the head is missing.

Tephritis mellea Walker

1837, *Trans. Linn. Soc. Lond.* **17** : 358. Brazil.

T. quinquefasciata Walker

1837, *op. cit.* : 357. South America.

T. unicolor Walker

1837, *op. cit.* : 358. Port Famine, Straits of Magellan.

Aczél (1949, *Acta Zool. Lilloana,* **7** : 311) has placed this under the combination *Trypanea unicolor* (Walker).

Trypeta acidusa Walker

1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1014. Jamaica.

Stone (1939, *Jour. Wash. Acad. Sci.* **29** : 349) placed this under the combination *Lucumaphila acidusa* (Walker). [Tephritidae.]

T. adatha Walker

1849, *op. cit.* : 1032. Congo.

T. aesia Walker

1849, *op. cit.* : 1006. Galapagos Isl.

Aczél (1949, *Acta Zool. Lilloana,* **7** : 281) lists this under the combination *Euaresta aesia* (Walker).

T. aex Walker

1849, *op. cit.* : 1037. Brazil.

Hendel (1914, *Abh. Ber. K. Zool. Anthrop. Mus. Dresden,* **14** : 23) listed this under the combination *Hexachaeta? aex* (Walker).

T. aira Walker
1849, *op. cit.* : 1023. Congo.

T. albida Walker
1852, *Ins. Saunds.* **4** : 384. S. Australia. Type not present in British Museum.

T. albovaria Walker
1852, *op. cit.* : 383, pl. 8, fig. 4. Senegal?
Listed by Hendel (1914 *Abh. K. K. Zool-Bot. Ges. Wien,* **8** (**1**) : 364) as a synonym of *Engistoneura maerens* (Fabricius) (1775, *Ent. Syst.* **4** : 349) ; family Otitidae.

T. alcinoe Walker
1849, *op. cit.* : 1010. Loc.?

T. arcuata Walker
1852, *op. cit.* : 383. United States.
Listed by Hendel (1914, *Abh. K. K. Zool.-Bot. Ges. Wien,* **8** (**1**) : 18) as a synonym of *Tritoxa flexa* (Wiedemann) (1830, *Ausser. Zweifl. Ins.* **2** : 384) ; family Otitidae.

T. argus Walker
1849, *op. cit.* : 1033. Bahia.

T. avala Walker
1849, *op. cit.* : 1020. Jamaica.

T. brevivitta Walker
1865. *Jour. Proc. Linn. Soc. Lond.* **8** : 124. New Guinea.
Type not present in British Museum.

T. cassara Walker
1849, *List Spec. Dipt. Ins. coll. Brit. Mus.* **4** : 1026. Peru.
Aczél (1949, *Acta Zool. Lilloana,* **7** : 286) lists this under the combination *Paroxyna cassara* (Walker). *Paroxyna* Hendel (1927) is a synonym of *Stylia* Robineau-Desvoidy (1830) (See Hardy & Adachi, 1956, *Insects of Micronesia,* **14** (**1**) : 21) so the correct name should be *Stylia cassara* (Walker) (new combination).

T. conferta Walker
1852, *Ins. Saunds.* **4** : 379. Columbia.

T. cornifera Walker
1849, *op. cit.* : 1011. Loc.?

T. cornigera Walker
1849, *op. cit.* : 1010. N.A.?

T. cosyra Walker
1849, *op. cit.* : 1042. Congo.

T. cronia Walker
1849, *op. cit.* : 1039. N. Holland.
Hendel (1914, *Abh. Ber. K. Zool. Anthrop. Mus. Dresden,* **14** : 23) lists this under the combination *Hexachaeta? cronia* (Walker).

T. cyana Walker
1849, *op. cit.* : 1031. Sierra Leone.

T. dinia Walker
1849, *op. cit.* : 1040. Jamaica. Hendel (1914, *loc. cit.*) lists this under the combination *Hexachaeta? dinia* (Walker).

T. diversata Walker
1865, *Jour. Proc. Linn. Soc. Lond.* **8** : 124. New Guinea.
Type not present in British Museum.

T. divisa Walker
1852, *op. cit.* : 381. Brazil.

T. donysa Walker
1849, *op. cit.* : 1007. Loc.?

T. dubia Walker
1852, *op. cit.* : 379. Cape.

T. ethalea Walker
1849, *op. cit.* : 1015. Para.
Type not present in British Museum.

T. excepta Walker
1852, *op. cit.* : 387. Brazil.
Type not present in British Museum.

T. flexuosa Walker
1852, *op. cit.* : 382. Cape Coast.

T. hysia Walker
1849, *op. cit.* : 1016. Sierra Leone.

T. laeta Walker
1852, *op. cit.* : 388. Brazil.
Type not present in British Museum.

T. lutescens Walker
1857, *Trans. Ent. Soc. Lond.* **4** (5) : 229. Amazon.

T. mevarna Walker
1849, *op. cit.* : 1023. Florida.

T. mixta Walker
1852, *op. cit.* : 385. East Indies.
Type not present in British Museum.

T. narytia Walker
1849, *op. cit.* : 1020. Florida.

T. oborinia Walker
1849, *op. cit.* : 1041. Congo.

T. ocresia Walker
1849, *op. cit.* : 1016. Jamaica.
This is an *Anastrepha* Schiner, see Stone (1942, *U.S.D.A. Misc. Pub.* **439** : 24).

T. pantherina Walker
1852, *op. cit.* : 386. Brazil.

T. parallela Walker
1852, *op. cit.* : 381. Cape.
Type not present in British Museum.

T. polygramma Walker
1860, *Trans. Ent. Soc. Lond. n.s.* **5** : 326. Natal.

T. quadrigutta Walker
1852, *op. cit.* : 386. S. America.
Aczél (1953, *Acta Zool. Lilloana*, **13** : 155) treats this under the combination *Polymorphomyia quadrigutta* (Walker) [Tephritidae]. He had earlier (1949, *op. cit.* 7 : 267) placed it under *Pseudeutreta quadrigutta* (Walker).

T. scutellata Walker
1852, *op. cit.* : 384. Senegal?

T. tritea Walker
1849, *op. cit.* : 1034. Sierra Leone.

T. varia Walker
1852, *op. cit.* : 382. S. America.
Type not present in British Museum.

T. viana Walker
1849, *op. cit.* : 1006. Loc.?

T. voneda Walker
1849, *op. cit.* : 1028. Bahia.

FRANCIS WALKER'S PAPERS IN WHICH FRUIT FLIES ARE DESCRIBED

1836
Descriptions of the British Tephritites. *Ent. Mag.* **3** : 57–85.

1837
Descriptions, etc. of the Insects collected by Captain P. P. King, R.N., F.R.S., in the Survey of the Straits of Magellan. Diptera. *Trans. Linn. Soc. Lond.* **17** : 357–358.

1849
List of the Specimens of Dipterous Insects in the collection of the British Museum, **4** : 1005–1042 and 1071–1077.

1852
Insecta Saundersiana : or characters of undescribed Insects in the collection of W. W. Saunders. Diptera **4** : 378–388.

1857
Catalogue of the Dipterous Insects collected at Singapore and Malacca by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **1** : 28–35.

1857
Catalogue of the Dipterous Insects collected at Sarawak, Borneo, by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **1** : 132–134, pl. 1.

1857
Characters of undescribed Diptera in the collection of W. W. Saunders. *Trans. Ent. Soc. Lond. n.s.* **4 (5)** : 229–231.

1859
Catalogue of the Dipterous Insects collected in the Aru Islands by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **3** : 114–121 and 131.

1860
Catalogue of the Dipterous Insects collected at Makessar in Celebes by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **4** : 149–160 and 165.

1860
Characters of undescribed Diptera in the collection of W. W. Saunders. *Trans. Ent. Soc. Lond. n.s.* **5** : 322–323 and 326.

1861
Catalogue of the Dipterous Insects collected in Amboyna by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **5** : 162–165.

1861
Catalogue of the Dipterous Insects collected at Dorey, New Guinea, by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **5** : 246, 250–253.

1861
Catalogue of the Dipterous Insects collected at Manado, Celebes, and in Tond, by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **5** : 262, 290–291.

1861
Catalogue of the Dipterous Insects collected in Batchian, Kaisaa and Makian, and at Tidon in Celebes, by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **5** : 294–296.

1862

Catalogue of the Dipterous Insects collected at Gilolo, Ternate, and Ceram, by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **6** : 13–16, 22–23.

1864

Catalogue of the Dipterous Insects collected in Waigiou, Mysol, and North Ceram by Mr. A. R. Wallace, with Descriptions of New Species. *Jour. Proc. Linn. Soc. Lond.* **7** : 220–221, 227–229, 237–238.

1865

Descriptions of New Species of the Dipterous Insects of New Guinea. *Jour. Proc. Linn. Soc. Lond.* **8** : 116–117, 122–125.

1865

Descriptions of some New Species of Dipterous Insects from the Island of Salwatty, near New Guinea. *Jour. Proc. Linn. Soc. Lond.* **8** : 134–136.

1871

List of Diptera collected in Egypt and Arabia by J. K. Lord Esq., with descriptions of the species new to Science. *Entomologist,* **5** : 344.