

## A Key to the Genera of the Muscoidea (Diptera) Recorded from the Fiji Islands

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### INTRODUCTION

The Muscoidea of the Fiji Islands were the subject of a monograph by Bezzi (1928), who recorded 9 described species of Muscidae from the islands and described 11 new species of Muscidae and 1 of Fanniidae, based almost exclusively on material from the then Imperial Institute of Entomology and deposited in the collection of the Natural History Museum, London (U.K.). However, no key for the identification of either genera or species was given. Malloch (1928a, 1928b) also described some new species from the Fiji Islands. Emden (1942) re-assigned some of the described Coenosiini to different genera, and Pont (1970) gave notes on the location of the types of Bezzi's species. A new species was described by Vockeroth (1972). All these records and descriptions were summarised by Pont (1989).

The purpose of the present paper is to provide a key to the genera of the Muscoidea now known from the Fiji Islands, together with brief notes on the known species in each genus. Currently the Anthomyiidae are represented by 1 genus and 1 unnamed species; the Fanniidae by 2 genera and 4 species; and the Muscidae by 18 genera, 27 described species, and at least 10 unnamed/undescribed species. Of the 27 described species, several appear to have been introduced into Fiji but have failed to establish.

### SYSTEMATICS

#### KEY TO THE FIJIAN GENERA OF THE MUSCOIDEA

- 1 Vein  $A_1$  reaching wing-margin. Hind tarsomere 1 with a distinct but short subbasal ventral seta. Scutellum with a group of soft pale hairs on ventral surface at tip ..... **ANTHOMYIIDAE**  
[One genus and probably one species in Fiji: *Anthomyia* Meigen.]
- Vein  $A_1$  not reaching wing-margin. Hind tarsomere 1 without a ventral seta near base. Scutellum almost never with soft pale hairs ventrally ..... 2
2. Hind tibia with a strong median dorsal seta in line with the dorsal preapical seta. Subcosta diverging from vein  $R_1$  at a point very close to the base of both veins, running in a smooth curve to costa. Vein  $A_1$  very short, and if extended meeting an imaginary extension of vein  $A_2$  before wing-margin **FANNIIDAE** .... 3
- Hind tibia without a strong median true dorsal seta, occasionally with a seta to the posterior side of dorsal placed well in apical half of tibia. Subcosta very close

to vein  $R_1$  for most of its length, diverging from it only near apex of subcosta, its course sinuous rather than smooth (except in *Hydrotaea*, where its course is as in Fanniidae). Vein  $A_1$  longer, if extended not meeting an imaginary extension of vein  $A_2$  before wingmargin **MUSCIDAE** ..... 4

3. 1 strong presutural dorsocentral seta, preceded by a rudimentary anterior one that is hardly distinct from the ground-setulae. Antennal scape and pedicel, lower frontal vitta, palpus, tip of scutellum and legs (except tarsomeres) yellow. ♂: head dichoptic, no head dimorphism between the sexes ..... **Euryomma** Stein  
[One species, *E. peregrinum* (Meigen), throughout the tropics and subtropics of the world.]
- 2 strong presutural dorsocentral setae. Antennae, frontal vitta, palpus, scutellum and legs (except knees and occasionally fore tarsomeres) black. ♂: head holoptic, with considerable head dimorphism between the sexes .....  
..... **Fannia** Robineau-Desvoidy  
[Three species: *F. canicularis* (Linnaeus), the little house fly, cosmopolitan; *F. albitarsis* Stein, introduced, native of South America; *F. pusio* (Wiedemann), introduced, native to the New World.]
4. Anepimeron partly setulose ..... 5
- Anepimeron bare ..... 11
5. Proboscis adapted for piercing: elongate, strongly sclerotised and non-retractile, tapering from a broad base to a slender apex and with labella atrophied ..... 6
- Proboscis not adapted for piercing: moderately or weakly sclerotised and retracted into head, not tapering strongly to apex, and with labella well-developed and often fleshy ..... 7
6. Palpus about one-third as long as labium. Meron and disc of proepisternal depression setulose. Notopleuron with numerous setulae ..... **Stomoxys** Geoffroy  
[Two species: *S. calcitrans* (Linnaeus), cosmopolitan; *S. indicus* Picard, an Oriental species.]
- Palpus about three-quarters as long as labium. Meron and disc of proepisternal depression bare. Notopleuron without setulae .....  
..... **Haematobia** LePeletier & Serville  
[Allegedly two species: *H. exigua* de Meijere, the buffalo fly, widespread Indo-Australasian; *H. irritans* (Linnaeus), the horn fly, Palearctic and introduced into the New World and Hawai'i.]
7. Lower calypter broad, truncate posteriorly, its posterior margin following scutellar margin before diverging away ..... 8
- Lower calypter narrow, tongue-like, its posterior margin at right-angles to scutellum right from its base ..... 10
8. Large coal-black species with deep yellow wing-bases, body-length at least 11 mm. Anterior katepisternal seta absent. Base of vein  $R_{4+5}$  bare .. **Mesembrina** Meigen  
[One species, *M. meridiana* (Linnaeus), introduced from Europe in 1932 for housefly control but not established.]
- Differently coloured and smaller species, body-length rarely even 9 mm. Anterior katepisternal seta present. Base of vein  $R_{4+5}$  setulose at least on ventral surface ..... 9

9. Metallic green, blue or violet species. Supra-squamal ridge setulose along its entire length. Greater ampulla, subcostal sclerite and face above mouth-edge setulose. Mid tibia with a strong posteroventral seta beyond middle ..... **Neomyia** Walker  
[Two species, both endemic: *N. simmondsi* (Bezzi) and *N. greenwoodi* (Bezzi).]
- Not metallic green species. Supra-squamal ridge bare. Greater ampulla, subcostal sclerite and face bare. Mid tibia without a posteroventral seta ..... **Musca** Linnaeus  
[Two species, both introduced: *M. domestica* Linnaeus, the common house fly, cosmopolitan; *M. vetustissima* Walker, the Australian bush fly.]
10. Parafacial with one or more irregular rows of fine hairs for most or all of its length. Palpus moderately to strongly broadened in apical part. Vein  $R_{4+5}$  wholly bare. Prosternum bare. Posterior spiracle with several setulae at posterior end, but without a row of setulae along lower margin. ♂ frons about one-third of head-width ..... **Lispe** Latreille  
[Three species have been seen, but their specific identities not yet established.]
- Parafacial bare. Palpus slender or very slightly broadened in apical part. Vein  $R_{4+5}$  setulose at least on ventral surface. Prosternum setulose. Posterior spiracle with a row of black setulae along lower margin. ♂ frons at most one-sixth of head-width ..... **Dichaetomyia** Malloch  
[Three species, two of which are endemic: *D. vicaria* (Walker), an Australasian species, *D. elegans* Malloch and *D.n.sp.* (Evenhuis & Pont., in prep.).]
- 11 Node at base of vein  $R_{4+5}$  with 1 or more setulae on dorsal as well as ventral surfaces ..... 12
- Node at base of vein  $R_{4+5}$  bare on dorsal surface, bare or setulose on ventral surface ..... 14
12. Lower calypter broad, truncate posteriorly, its posterior margin following scutellar margin before diverging away. Several pairs of presutural and postsutural acrostichal setae present. Meron with a few setulae above hind coxa and, sometimes, below spiracle. ♀: frontal vitta with many setulae and a pair of crossed setae ..... **Passeromyia** Rodhain & Villeneuve  
[Two species, their larvae parasitic on nestling birds: *P. indecora* (Walker), otherwise known only from Australia, and *P. veitchi* Bezzi, endemic (Pont, 1974).]
- Lower calypter narrow, tongue-like, its posterior margin at right-angles to scutellum right from its base. Without acrostichal setae except for 1 pair before scutellum. Meron entirely bare. ♀: frontal vitta bare ..... 13
13. Prosternum bare. Mid femur with an anterior preapical seta. Hind tibia with a dorsal and an anterodorsal preapical seta. Pre-alar seta short but distinct. Arista long plumose. Body, antenna, palpus and legs yellow ..... **Myospila** Rondani  
[One species, *M. effeminata* Vockeroth, endemic (Vockeroth, 1972).]
- Prosternum setulose. Mid femur without an anterior preapical seta. Hind tibia with only the dorsal preapical seta, the anterodorsal absent. Pre-alar seta wholly absent. Arista at most short-plumose. Body, antenna, palpus and legs black ..... **Limnophora** Robineau-Desvoidy  
[Three species seen, one of which is *L. mesolissa* Bezzi, Australasian in distribution.]

14. Prosternum setulose. Scutellum with numerous setulae on sides and at ventral angle.  
 Arista bare ..... **Synthesiomia** Brauer & Bergenstamm  
 [One species: *S. nudiseta* (Wulp), a widespread filth fly in the Old and  
 New World tropics and subtropics.]
- . Prosternum bare. Scutellum bare on sides and at ventral angle (except in *Muscina*,  
 which has a long-plumose arista) ..... 15
15. Head subquadrate in lateral view, with the antenna long and inserted just below level  
 of upper eye-margin. Presutural dorsocentral setae short and weak, hardly dis-  
 tinguishable from the ground-setulae. Fore femur with 0–2 posteroventral setae,  
 situated near apex ..... **Atherigona** Rondani  
 [At least five species are known to occur: *A. orientalis* Schiner, throughout the Old and  
 New World tropics and subtropics; *A. oryzae* Malloch, mainly Indo-Australasian  
 in distribution; *A. hendersoni* Malloch, a Pacific species; and *A. poecilopoda* Bezzi  
 and *A. splendens* Bezzi, both probably endemic to Fiji.]
- . Head variable in shape, but never subquadrate, and antenna inserted well below level  
 of upper eye-margin. Presutural dorsocentral setae distinct and strong, longer  
 than the ground-setulae. Fore femur with a complete row of posteroventral setae  
 ..... 16
16. Katepisternal setae arranged at the points of an imaginary equilateral triangle, the  
 lower one equidistant from the upper two. Lower proepimeral seta directed for-  
 wards and downwards ..... 17
- . Katepisternal setae not arranged at the points of an imaginary equilateral triangle, the  
 anterior one more distant from the posterior 1–3. Lower proepimeral seta direct-  
 ed upwards ..... 20
17. Head with only one pair of reclinate orbital setae. Hind tibia with 1 anterodorsal seta.  
 1 presutural dorsocentral seta ..... **Coenosia** Meigen  
 [One species, awaiting identification.]
- . Head with 2 pairs of reclinate orbital setae. Hind tibia with 2 anterodorsal setae. 1 or  
 2 presutural dorsocentral setae ..... 18
18. Mid tibia with 2 submedian posterior setae. Frontal triangle small and confined to the  
 area of the ocelli, not nearly reaching lunula. Fore tibia with a strong submedi-  
 an posteroventral seta. Arista very long plumose on basal half and bare on api-  
 cal half, the longest individual hairs twice width of antennal flagellomere .....  
 ..... **Pygophora** Schiner  
 [One species: *P. ctenophora* Bezzi, endemic.]
- . Mid tibia with 1 submedian posterior seta. Frontal triangle large or at least long and  
 narrow, more or less reaching lunula. Fore tibia without a submedian poster-  
 oventral seta. Arista shorter plumose, the longest individual hairs equal to  
 width of antennal flagellomere and continued evenly to tip of arista ..... 19
19. Lower calypter normal in size, projecting beyond upper one. Scutellum with the  
 basal setae absent. Wing milky-white along posterior and apical margins, brown  
 along anterior margin, and elsewhere pale smoky-brown. Hind tibia with only  
 1 short submedian posterodorsal seta ..... **Orchisia** Rondani  
 [One species: *O. costata* (Meigen), throughout warm regions of the Old World.]

- . Lower calypter reduced, linear, not projecting beyond upper one. Basal scutellar seta half as long as apical one. Wing completely clear. Hind tibia with 2 posterodorsal setae ..... **Parvisquama** Malloch  
[Two described species, *P. tripuncta* (Malloch) and *P. dolichocera* (Bezzi), both endemic, and several undescribed species.]
- 20. Subcosta very close to vein  $R_1$  for most of its length, diverging from it only near apex of subcosta, its course sinuous rather than smooth. Vein M curved forward towards vein  $R_{4+5}$  in apical part. Arista plumose. Scutellum at tip and all tibiae yellow ..... **Muscina** Robineau-Desvoidy  
[One species: *M. stabulans* (Fallén), a cosmopolitan filth-fly.]
- . Subcosta diverging from vein  $R_1$  at a point very close to the base of both veins, running in a smooth curve to costa. Vein M running straight to the wing-margin. Arista pubescent. Body and legs wholly dark ..... **Hydrotaea** Robineau-Desvoidy  
[One species: *H. spinigera* (Stein), an Old World tropical filth fly.]

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