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# *Austalis*, a new genus of flower flies (Diptera: Syrphidae) with revisionary notes on related genera

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## Abstract

A new genus and species of flower flies are described from the Australian biotic region (*Austalis* Thompson & Vockeroth, type *Eristalis resolutus* Walker; *Austalis rhina* Thompson (Solomon Is.)). A key is provided to the groups of the subtribe Eristalina, along with nomenclatural notes and checklist of genus-group names. Five genus-group names and 1 species-group name are synonymized (*Pseudomeromacrus* Li, 1994 = *Eristalinus* (*Merodonoides* Curran, 1931)); *Cryptoeristalis* Kuznetzov 1994 = *Eristalis* (*Eoseristalis* Kanervo, 1938)); *Paramesembrius* Shiraki 1930, *Klossia* Curran, 1931 & *Catacores* Hull, 1944 = *Kertesziomyia* Shiraki, 1930; *Eristalis maritima* Hull, 1945 = *Austalis resoluta* (Walker, 1858)).

**Key words**: Taxonomy, Syrphidae, key, Australian Region, rat-tailed maggots

## Introduction

Eristaline flower flies are among the most common and conspicuous flower flies. These flies are common pollinators almost wherever flowers are found, being absent only in truly arid areas and the Polar Regions. The larvae of eristaline flower flies are filter feeders in all kinds of aquatic media. Occasionally these larvae are accidentally swallowed by humans, thus, causing myiasis. Otherwise, the larvae contribute to the purification of water by filtering out microorganisms and other products. These flies are currently placed into 16 genera and 400 species.

The concept denoted by the name *Eristalis* has been very broad, including a diverse array of species. Over the years, particularly while preparing species catalogs (Knutson, et al., 1975; Thompson, et al. 1976; Smith & Vockeroth, 1980; Thompson & Vockeroth, 1989), Vockeroth and I have developed new definitions for the natural groups covered by

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this term of convenience. We were not able to properly document our classifications, given the time limitation and format of these catalogs. These new concepts are here defined by the key. This paper represents part of the one that we have frequently referred to as being in preparation and in press (Thompson 1972: 139, 1981: 147) and describes a group of *Eristalis* species endemic to the Australian Region.

*Eristalis* was established by Latreille (1804) and was used in differing senses by early authors (Fabricius, Meigen and Fallén). Fabricius (1805: 231) considered *Musca nemorum* Linnaeus to be the typical species and defined the genus broadly. Meigen (1822: 382) characterized Fabricius' interpretation as “ein Mischmasch” and restricted the name to those species with sinuate vein R4+5 and a petiolate cell R1. Fallén (1816-17) and Zetterstedt (1838, 1843, 1849, 1859) used the name in the sense of *Cheilosia* Meigen and placed the rat-tailed maggots (eristaline species) in *Syrphus*. Curtis (1832) designated *Musca tenax* Linnaeus the type species of *Eristalis*, thus fixing Meigen's concept under our rules of nomenclature. Subsequent workers accepted and followed Meigen's definition. Rondani (1857) and Mik (1897) divided the broad concept of *Eristalis* into subgroups, based on characters of the eyes (maculation, pilosity, condition in males) and arista (pilosity). Their work, however, was largely ignored (see Verrall (1901: 496) for a review of the early history of the genus). In this century only three authors have investigated the systematics of *Eristalis* in detail, all from a regional view. Hull (1925) studied the New World species and defined species groups based on color pattern. Shiraki (1930) studied the Far East species, creating a new subgeneric classification based on the characteristics of the eyes and arista. Kanervo (1938) proposed a new classification for the Palaearctic species based on a study of the male genitalia. Hull (1949) provided a world overview of the genera of flower flies, including a key to genera. Despite all these various studies, most workers still used *Eristalis* in a very broad sense of almost any flower fly with a petiolate cell R1, sinuate R4+5 vein and a tuberculate face. Only a few groups have been recognized for species with specializations.

All the genera related to *Eristalis* are placed in their own subtribe, Eristalina. The larvae are aquatic and have a distinctive habitus, usually being referred to as rat-tailed maggots. The adults of "rat-tailed maggots" are placed into the tribe Eristalini, which in turn is divided into 3 groups: those related to *Sericomyia* Meigen (here subtribe Sericomyiina) which have vein R 2+3 straight or at most slightly sinuate, cell R1 open and metafemur without basolateral setose patch; those related to *Helophilus* Meigen (subtribe Helophilina), which have vein R 2+3 strongly sinuate, cell R1 open and metafemur with basolateral setose patch; and those related to *Eristalis* (subtribe Eristaliina), which have vein R2+3 sinuate, cell R1 usually petiolate and metafemur with basolateral setose patch. The monophyly of Sericomyiina is demonstrated by asymmetric male genitalia of its members. The subtribe Helophilina are merely a grade (paraphyletic group). The Eristalina are considered monophyletic as most members have cell R1 petiolate. Unfortunately, this character is variable in the genus *Kertesziomyia* Shiraki. This is a summary and synthesis of the tra-

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ditional morphological characters of the adults (see Thompson 1972) and larvae (see Rotheray & Gilbert 1999). Molecular data also supports these groupings (see Ståhls 1999).

The key to the genera of the Eristalina and the concepts it defines were developed by J. R. Vockeroth and myself in 1971 when we were cataloging the Oriental species (Knutson et al. 1975). Not all the groups that Vockeroth recognized are here keyed nor named. Vockeroth, for example, felt that the species related to *Eristalis conducta* Walker formed a distinct group, but I include them in *Kertesziomyia*. Likewise, he believed that *Eristalis plumipes* Bezzi and related Afrotropical species deserved recognition as a separate genus, but they are here included as the *dasyops* species group. Further, he recognized that *Palpada* Macquart could be broken down into four distinct groups, two of which have no names. Also, as we both recognized that the bright metallic Oriental-Australian species were unique, the name and concept of *Austalis* must be recognized as belonging to both of us.

Not all the groups are formally named nor are of equivalent rank, as my own research on the higher classification of flower flies remains incomplete. These matters required a full cladistic analysis and are left to Christian Kassebeer, who is revising the tribe Eristalini for his PhD thesis.

## Format

Terminology follows Thompson (1999b). The format for and abbreviations found in the synonymies follow Thompson (2002). In the material examined section, the use of ellipses follows standard English practice and merely indicates that the missing information is the same as that in the preceding record. The acronyms used for collections follow the standard of the BioSystematic Database of the World Diptera (Thompson 1999a), and their equivalents are given in the acknowledgements.

## Key to the groups of the subtribe Eristalina

1. Anepimeron with triangular portion bare (Figs. 1, 3-4) ..... 6
- Anepimeron with triangular portion pilose (Fig. 2) ..... 2
2. Postalar pile tuft absent; eye bare, without maculation; wing brown, completely microtrichose; scutellum with marginal sulcus ..... *Solenaspis*
- Postalar pile tuft present (Fig. 5); eye with maculae; wing hyaline; scutellum without marginal sulcus ..... 3
3. Wing densely and uniformly microtrichose on apical half ..... *Eristalinus* (*Helophilina*)
- Wing bare or sparsely microtrichose ..... 4
4. Metafemur thickened, distinctly arcuate; metatibia strongly compressed and carinate on basoventral 1/3; eye bare or very finely pilose dorsally, with pili no longer than

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ommatidial diameter; male metatrochanter with ventral patch of short stiff black setulae ..... *Eristalinus* (*Merodonoides*)

- Metafemur at most very slightly thickened, not arcuate; metatibia not carinate nor compressed ventrally; eye usually densely pilose, with pili much longer than ommatidial diameter; male metatrochanter simple ..... 5

5. Eye punctate (with spots) ..... *Eristalinus* (*Eristalinus*)
- Eye fasciate and punctate (with bands and bands) ..... *Eristalinus* (*Eristalodes*)
6. Katepimeron bare (Fig. 3) ..... 13
- Katepimeron pilose (Fig. 4) ..... 7
7. Meron bare posteroventrally, without pile anterior or ventral to metathoracic spiracle (Fig. 4); eye pilose; arista pilose ..... *Eristalis*
- Meron pilose posteroventrally, with pile anterior or ventral to spiracle ..... 8
8. Eye pilose, at least some pile dorsally, frequently densely pilose; arista bare ..... 12
- Eye usually bare, if with a few distinct pili, then arista pilose ..... 9
9. Scutellum without apical sulcus; metatibia at most very slightly compressed apically, with apical half not broader than basal half, without dorsal or ventral pile fringes ..... *Austalis* **gen. nov.**
- Scutellum with apical sulcus along margin; metatibia strongly compressed on apical half, distinctly broader than basal half, and often with dense dorsal and ventral fringes of dark hairs ..... 10
10. Arista bare; wing microtrichose on apical half; precallar depression bare or with at most a few pili mesially; male holoptic ..... *Senaspis*
- Arista pilose, with short to moderately long pili; wing at least bare apicoposteriorly; precallar depression with many stiff pili posteriorly ..... 11
11. Front with strongly rugose area dorsal to antenna; male holoptic ..... *Phytomia*
- Front not rugose; male dichoptic ..... *Simoides*
12. Face drawn out into a long slender porrect snout ..... *Lycastrirhyncha*
- Face not drawn out into a snout ..... *Palpada*
13. Postalar pile tuft present (Fig. 5); eye bare ..... *Kertesziomyia*
- Postalar pile tuft absent ..... 14
14. Eye pilose ..... 20
- Eye bare ..... 15
15. Wing with a stigmatic crossvein between Sc and R1 apically ..... 19
- Wing without stigmatic crossvein ..... 16
16. Face concave, straight or produced anteroventrally, without a tubercle ..... 18
- Face with distinct tubercle ..... 17
17. Wing hyaline; basoflagellomere large, much longer than metathoracic spiracle; katepisternum discontinuously pilose, with a few ventral pili, broadly bare medially, pilose on dorsal 1/4; plumula greatly reduced, not branched ..... *Digulia*

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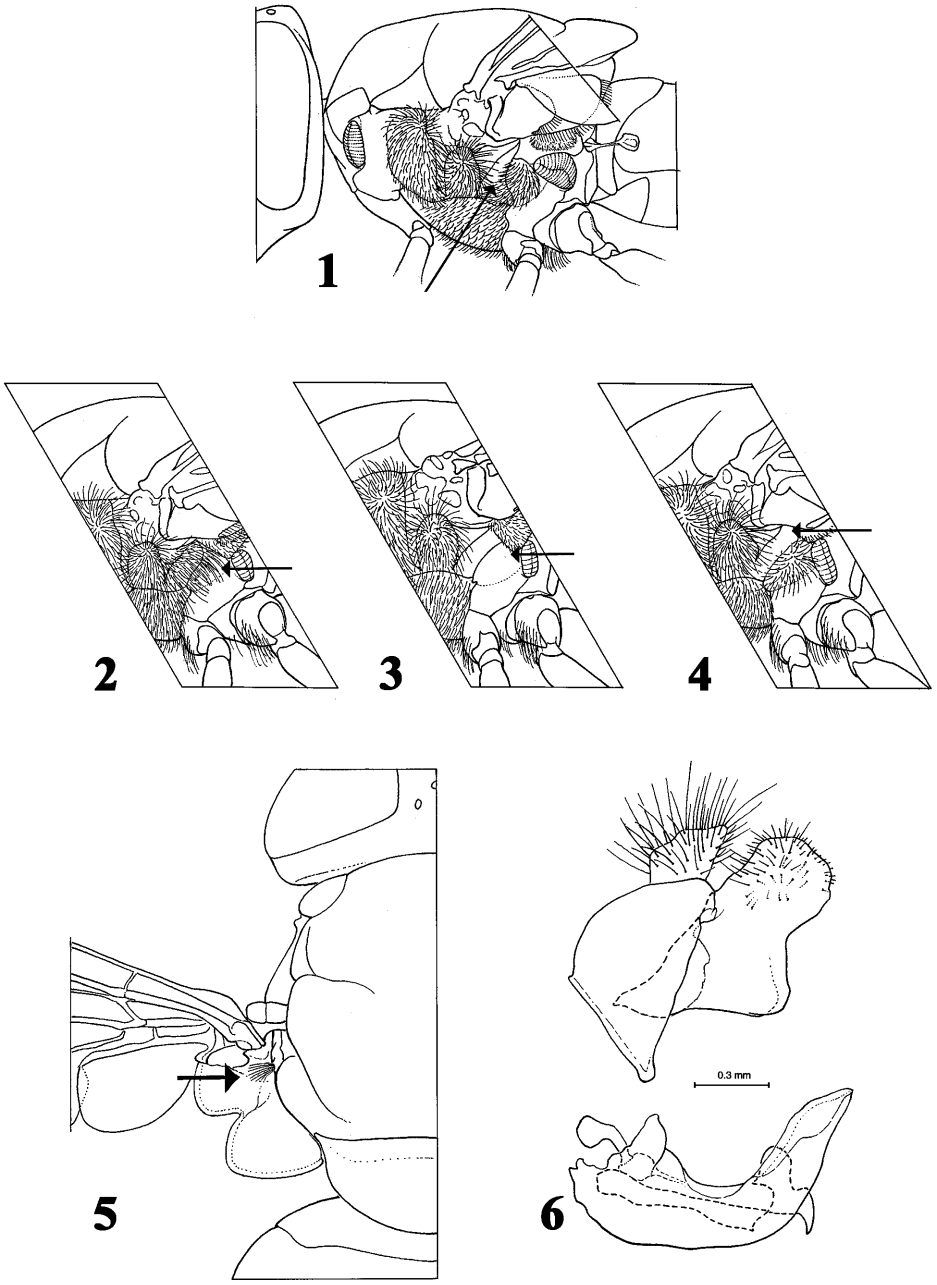


**FIGURES 1-6**. 1-4. Thoracic pleurae of eristaline flies. Arrows point to the critical areas, 1. *Austalis rhina*, sp. nov., arrow pointing to bare anterodorsal area of the posterior anepimeron, 2. *Eristalinus aeneus* (Scopoli), arrow pointing to pilose katepimeron, 3. *Eristalis* (*Eoseristalis*) *arbustorum* (Linnaeus), arrow pointing bare posterior anepimeron and meron, 4. *Eristalis* (*E.*) *tenax* (Linnaeus), arrow pointing to bare posterior anepimeron, but pilose katepimeron; 5. Thorax, dorsal view, *Eristalinus aeneus* (Scopoli), arrow pointing to postalar pile turf; 6. Male genitalia, lateral view, *Austalis rhina*, sp. nov. Figures 1-5 are from Thompson & Rotheray (1998).

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- Wing brown on anterior half; basoflagellomere small, only about as long as metathoracic spiracle; katepisternum continuously and densely pilose; plumula well developed, multibranched ..... *Axona*

18. Mesonotum unicolorous; vein R4+5 only slightly sinuate; crossvein r-m basal, before middle of discal cell; wing partially bare; male dichoptic; body usually with short thick scale-like pile in addition to long normal pile ..... *Dissoptera*
- Mesonotum vittate; R4+5 strongly sinuate; crossvein r-m apical, beyond middle of discal cell; wing entirely microtrichose; male holoptic; body without specialized pile ..... *Keda*

19. Mesonotum and frequently abdomen with patches of dense subappressed tomentose yellow pile; male metafemur usually not enlarged, never with basolateral tubercle ..... ..... *Meromacrus*
- Without tomentose pile; male metafemur enlarged, with basolateral tubercle ..... ..... "*Senaspis*" *apophysata*

20. Metatibia not compressed nor carinate; wing bare apically ..... *Eristalis* (*Eoseristalis*)
- Metatibia compressed and carinate on basoventral 1/3; wing microtrichose on apical 1/3 or more ..... 21

21. Metafemur greatly swollen; wing dark brown on anteroapical 1/3; cell R2+3 bulbous apically; male dichoptic ..... *Meromacroides*
- Metafemur not greatly swollen; wing hyaline; cell R2+3 not bulbous apically; male holoptic "*Eristalis*" *dasyops* group

**Austalis Thompson & Vockeroth, gen. nov.**

Type-species: *Eristalis resolutus* Walker

**Head**: face broadly pilose and pollinose laterally, usually shiny and bare medially, rarely entirely pollinose, straight except for medial tubercle and slight anterior production at antennal pits; tentorial pit short, extending along ventral third of eye; facial stripes indistinct; frontal prominence low, on dorsal third of head; eye bare, holoptic to broadly dichoptic in males; antenna short, about 1/4 as long as face; basoflagellomere oval, slightly longer than broad; arista variable, from bare to plumose.

**Thorax**: slightly longer than broad, with long pile; anterior anepisternum bare; katepisternum continuously pilose from ventral to dorsal margin; anepimeron with dorsomedial and posterior portions bare; without a postalar pile tuft; katepimeron pilose dorsally; metathoracic pleuron bare; metathoracic spiracle large, usually larger than basoflagellomere; plumula long and multibranched; scutellum without apical sulcus. Legs: simple; metafemur not swollen; metatibia without basal nor apical carina nor apical dens. Wing: usually partially microtrichose; cell R1 closed and petiolate; cell R4+5 petiolate, with petiole as long as stigmatic crossvein; stigmatic crossvein present.

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**Abdomen**: oval to suboval.

*Austalis* is readily distinguished from all other eristaline syrphids by the pilosity of the pleuron (Fig. 1), having the unique combination of pilose posteroventral anepimeron along with pilose katepimeron. These flies are also typically bright metallic in coloration. Ferguson (1926: 153), while recognizing a broad definition for *Eristalis*, did recognize that the species with metallic coloration formed a distinct group. He, however, declared that *pulchellus* had "no very close relationship."

Little is known of the life histories of the species of *Austalis*. Our only source of information is what has been recorded on specimen labels and unfortunately there is not much beyond the standard locality, date and collector data. However, there is a series of specimens of a few species which were collected by H. Roberts as part of an ecological study of Geschis Seed Orchards in Papua New Guinea. His work indicated that the adults are not uncommon pollinators of *Eucalyptus*.

*Etymology.* The name *Austalis* is an arbitrary combination of letters created to be similar to *Eristalis* and the Australasian Region where the group occurs. The name is to be treated as feminine.

*Eristalis* is a Latin noun of feminine gender (Lewis & Short 1879: 657, Brown 1956: 339), however the International Commission of Zoological Nomenclature (ICZN 1993: 256) as well as various authors (Fabricius, Meigen, and others) treated the name as of masculine gender. As the Code (ICZN 1999: 34, see Art. 30.1.1) clearly states that genus-group names based on Latin nouns take the gender accorded to them by Latin dictionaries (such as Harpers' (Lewis & Short 1879)), *Eristalis* is feminine regardless of the Commission's own declaration.

*Austalis* includes the following species, all of which represent new nomenclatural combinations: *aequipars* Walker (1864: 210, *Eristalis*); *bergi* Curran (1947: 12, *Eristalis*); *caledonica* Bigot (1884: 339, *Eristalomyia*); *calliphoroides* Shiraki (1963: 165, *Eristalis*); *ciliata* Meijere (1913: 355, *Eristalis*); *conjuncta* Ferguson (1926: 155, *Eristalis*); *copiosa* Walker (1852: 249, *Eristalis*); *cupreoides* Goot (1964: 220, *Eristalis*); *erythropyga* Walker (1864: 211, *Eristalis*); *inscripta* Doleschall (1857: 407, *Eristalis*); *latilimbata* Meijere (1913: 354, *Eristalis*); *lucilioides* Walker (1861: 284, *Eristalis*); *luciliomima* Hull (1944: 46, *Eristalis*); *muscoides* Walker (1858: 96, *Eristalis*); *muscomima* Hull (1944: 48, *Eristalis*); *postscripta* Walker (1864: 210, *Eristalis*); *pulchella* Macquart (1846: 255, *Eristalis*); *refulgens* Doleschall (1858: 96, *Eristalis*); *resoluta* Walker (1858: 95, *Eristalis*; = *maritima* Hull, 1945: 210, *Eristalis*, **syn. nov.**); *rhynchops* Bezzi (1928: 80, *Eristalis*); *roederi* Bergroth (1894: 72, *Eristalis*); *smaradgi* Walker (1849: 631, *Eristalis*); and *triseriata* Meijere (1913: 353, *Eristalis*). In addition, another dozen species are known from the Oriental and Australian Regions and will be described in a subsequent revision of the genus (Thompson, in preparation).

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**Austalis rhina Thompson, sp. nov.**

Male.—*Head* (Fig. 7): metallic greenish black; face silvery-white pollinose and pilose laterally and ventrad antenna, shiny and bare medially and along oral margin, produced strongly anteriorly, with low indistinct tubercle; gena very narrow, silver-white pollinose and pilose; lunule orange; frons narrowly silvery-white pollinose laterally, shiny medially, black pilose; vertex dull brownish-black pollinose, black pilose; eyes broadly dichoptic, separated by 1/4 head width, bare; antenna orange except basoflagellomere brownish dorsally, black pilose on basal segments, basoflagellomere with large basoventral sensory pit on inner side; arista orange, bare; occiput silvery pilose and pollinose on ventral 2/3, becoming sparsely pollinose on dorsal 1/3 with a row of black cilia.


**FIGURE 7**. Head, lateral view, *Austalis rhina*, sp. nov.

*Thorax*. Metallic greenish-black; scutum shiny except for dull black pollinose vittae and sparsely silvery pollinose on postpronotum and notopleuron, with a pair of narrow submedial pollinose vittae extending about 2/3 distance to scutellum, with a broader and interrupted sublateral pollinose vittae; postalar callus yellow pilose; scutellum shiny, yellow pilose; pleuron sparsely gray pollinose, yellow pilose; calypter white except apically


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brownish black on ventral margin; plumula white; halter orange; mesothoracic spiracular fringe brown; metathoracic spiracular fringe brown. Legs: Coxae dark greenish black, silvery pollinose, yellow pilose; trochanter brownish black, shiny, yellow pilose; pro & mesofemora dark brownish black on basal 1/3, orange apically, orange pilose; metafemur swollen, dark greenish black on basal 4/5, orange apically, shiny, yellow pilose except for black apicoventral spinose pile; tibiae orange, orange pilose; pro & mesotarsi orange except apical tarsomeres slightly brownish dorsally, orange pilose; metatarsus brownish dorsally, orange ventrally, black pilose. Wing: tegula orange; basicosta orange and black pilose; microtrichose except bare basomedially; bare apical 1/2 of cell R1, apical 4/5 of cell R2+3, apical 2/3 of cell R4+5, apical 1/3 of DM and along apical and posterior margin of cell CuA1; alula bare except apical 1/2 microtrichose.

*Abdomen*: dark green, shiny and with dull black pollinose maculae; 1st tergum shiny except medial 1/3, yellow pilose; 2nd tergum black pollinose except triangular shiny basolateral macula and apical margin, yellow pilose except short appressed black pilose medially; 3rd & 4th terga shiny basally and apically, black pollinose medially, orange pilose on shiny areas and black pilose elsewhere; male genitalia black, dull pollinose, yellow pilose; sterna metallic green, shiny except sparsely pollinose on 2nd sternum, yellow pilose. Male genitalia (Fig. 6).

Female.—Similar except for normal sexual dimorphism, barer wing (basal 2/3 of cell C, all of cells R1, R2+3, R4+5, basomedial 2/3 of DM, basomedially of cell CuP & CuA1); 5th tergum dark green, dull pollinose except narrowly shiny apically.

Types. Holotype male from **SOLOMON ISLANDS**: Gizo Island, Gizo, 0-200 m, Dec 1975, light trap, N. L. H. Kraus deposited in the Bishop Museum, Honolulu. Paratypes. 4 males with the same data as the holotype (BPBM & USNM); Gizo Island, Gizo, January 1974, N. L. H. Kraus (2 male, 3 females, BMNH & USNM); ..., Gizo, 0-140 m, Dec 1980, N. L. H. Krauss (2 males, BPBM & USNM). Buka Island, Buka Agricultural Station, 6-10 Dec 1959, T. C. Maa (2 males, 15 females, BPBM). Bougainville, Simba Mission, 29 June 1956, E. J. Ford, Jr. (4 females, BPBM), ..., 2 July 1956, E. J. Ford, Jr. (1 female, BPBM); ..., Arawa, 4 km n of Kleta, 9-13 July 1965, R. W. Crosskey (1 female, BMNH); ..., Kieta, 26 June 1956, E. J. Ford, Jr. (1 male, BPBM). New Georgia Island, Munda, 0-200 m, Nov 1975, N. L. H. Krauss (1 male, BPBM). Santa Isabel, Tamatahi, 450 m, 3 July 1960, C. W. O'Brien (1 male, 3 females, BPBM). Florida Island Group, Hanavaivine, Small Nggela, 15 Sept 1960, C. W. O'Brien (1 female, BPBM); ..., Halteta, 200-250 m, 10 Oct 1964, R. Straatman, Malaise trap (1 female, BPBM). Guadalcanal, Poha, Sept 1944, J. Laffoon, Cat.# 191 (1 female, USNM).

*Etymology*: The epithet, *rhina*, is an adjective from the Greek for nose and refers to the facial shape of the species.

*Austalis rhina* is readily distinguished from other species by its dichoptic males and snout-like face. This striking species is restricted to the Solomon Islands.

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## Nomenclatural checklist and notes

For each genus and subgenus (name in bold), the distribution (biotic regions only) and number of species are given. For each name, the name, author, year, page and status is given. For available genus-group name (except replacement names and emendations), the type-species is given with the manner of its fixation. Notes are inserted as necessary. Arrangement is alphabetic.

***Axona***. Australasian & Oriental Regions; 2 species

*Axona* Walker 1864: 211, type: *Axona volucelloides* Walker (Monotypy) = *chalcopyga* Wiedemann.

**Note**: *Axona* Walker is not preoccupied by *Axona* Stål (Hemiptera) as the former was published in April and the latter in the Fall (after September, the date of the preface to Stål's Hemiptera Africana, vol. 1).

***Digulia***. New Guinea; 1 species

*Digulia* Meijere 1913: 357, type: *Digulia kochi* Meijere (Monotypy).

***Dissoptera***. Australian & Oriental Regions: 7 species

*Dissoptera* Edwards 1915: 400, type: *Dissoptera pollinosa* Edwards (Monotypy) = *heterothrix* de Meijere.

*Xenozoon* Hull 1949: 401, type: *Dissoptera maritima* Hull (Original designation).

**Note**: The genus *Xenozoon* Hull (1949: 401) based on *Dissoptera maritima* Hull does not differ from *Dissoptera* Edwards and was therefore synonymized with the latter by Thompson & Vockeroth (1989: 449).

***Eristalinus***. Palaearctic, Afrotropical, Oriental to New Guinea; introduced into Nearctic, Neotropics, Australia, New Zealand; 100 species.

***Eristalinus***. Distribution as genus; 81 species

*Eristalinus* Rondani 1845: 453, type: *Musca sepulchralis* Linnaeus (Subsequent monotypy, Rondani 1857: 38).

*Lathyrophthalmus* Mik 1897: 114, type: *Conops aeneus* Scopoli (Original designation).

*Metalloeristalis* Kanervo 1938: 43 (as a subgenus), type: *Conops aeneus* Scopoli (Original designation).

*Oreristalis* Séguy 1951: 16. *Nomen nudum.*

**Note**: *Eristalis polychromata* Brunetti (1923, *Eristalis*), listed as an unplaced species of *Eristalis* (Knutson et al. 1975), is a species of *Eristalinus* (*Eristalinus*).

***Eristalodes***. Palaearctic, Afrotropical, Oriental; introduced into USA and Chile; 13 species.

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*Eristalodes* Mik 1897: 114, type: *Eristalis taeniopus* Wiedemann (original designation).

***Helophilina***. Afrotropical; 1 species.

*Helophilina* Becker 1922: 68, type: *Helophilina taeniaticeps* Becker (Monotypy) = *smaragdinus* Macquart.

*Sarnia* Curran 1927: 73, type: *Eristalis smaragdinus* Macquart (Original designation).

***Merodonoides***. Afrotropical, Oriental; 5 species.

*Merodonoides* Curran 1931b: 333, type: *Merodonoides circularis* Curran (Original designation) = *multifarius* Walker.

*Velocimyia* Hull 1937: 13, type: *Velocimyia velox* Hull (Original designation) = *abdominalis* Hervé-Bazin.

*Pseudomeromacrus* Li 1994: 146, type: *Pseudomeromacrus setipenitus* Li (Original designation) = *multifarius* Walker. **Syn. nov.**

***Eristalis***. All regions; 99 species.

***Eoseristalis***. Holarctic, Neotropical, Afrotropical, Oriental; 97 species.

*Eoseristalis* Kanervo 1938: 40, type: *Eristalis cerealis* Fabricius (Original designation).

*Cryptoeristalis* Kuznetzov 1994: 231, type: *Musca oestracea* Linnaeus (Original designation). **Syn. nov.**

**Notes**: *Cryptoeristalis* is group established for those species of *Eristalis* which are bumble-bee mimics (long-pilose species) and, hence, is not recognized. *Eristalis simulata* Brunetti (1923, *Eristalis*) is a synonym of *Eristalis* (*Eoseristalis*) *curvipes* (Schiner).

***Eristalis***. Palaearctic, Afrotropical and Oriental; introduced into Nearctic, Neotropical, Australian; 2 species.

*Tubifera* Meigen 1800: 34, type: *Musca tenax* Linnaeus (Subsequent designation by Coquillett 1910: 618).

*Elophilus* Meigen 1803: 274, type: *Musca tenax* Linnaeus (Subsequent designation by Latreille 1810: 443).

*Helophilus* Leach 1817: 159, emendation of *Elophilus*.

*Eristalis* Latreille 1804: 194, type: *Musca tenax* Linnaeus (Subsequent designation by Curtis 1832: 432).

*Cristalis* Wiedemann 1828: x, misspelling.

*Eristaloides* Rondani 1845: 453, type: *Musca tenax* Linnaeus (Subsequent designation by Coquillett 1910: 540).

*Eristalomya* Rondani 1857: 40, type: *Musca tenax* Linnaeus (Original designation).

*Eriops* Lioy 1864: 743, type: *Musca tenax* Linnaeus (Subsequent designation by Goffe 1946: 29).

*Eristalomyia* Scudder 1882: 127, emendation of *Eristalomya*.

***Keda***. Oriental to New Guinea; 1 species

*Keda* Curran 1931a: 331, type: *Eristalis simpliciceps* Meijere (Original designation) = *conclusa* Walker).

***Kertesziomyia***. East Palaearctic, Oriental to New Guinea; 14 species.

*Pseuderistalis* Shiraki 1930: 148 (as a subgenus), type: *Pseuderistalis bicolor* Shiraki (Original

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designation).

*Kertesziomyia* Shiraki 1930: 151, type: *Eristalis violascens* Kertész (Original designation).

*Paramesembrius* Shiraki 1930: 176 (as a subgenus), type: *Tubifera abdominalis* Sack (subsequent designation of Shiraki 1969: 227). **Syn. nov.**

*Klossia* Curran 1931b: 370, type: *Klossia dimidiata* Curran (Original designation) = *singularis* Walker. **Syn. nov.**

*Kertesziomya* Neave 1939: 825, misspelling.

*Catacores* Hull 1944: 205, type: *Axona cyanea* Brunetti (Original designation). **Syn. nov.**

**Notes**: The genus *Kertesziomyia* (previously as *Pseuderistalis*) is well defined by having a postalar pile tuft but lacking the pile on posterior portions of the anepimeron and having no pattern on the eyes (as in *Eristalinus*, the only other genus with a postalar pile tuft). *Kertesziomyia* probably should be broken up into a number of subgenera, but this is left to other workers. Here I note only that *Kertesziomyia*, *Pseuderistalis*, *Paramesembrius*, and *Klossia* all fit our definition of *Kertesziomyia*, and therefore, are regarded as new synonyms. As *Kertesziomyia* was proposed as a genus and both *Pseuderistalis* and *Paramesembrius* as subgenera, the name *Kertesziomyia* must be used as the senior name for the enlarged group.

The species which I include in *Kertesziomyia* are: 1) Those previously listed in *Pseudoeristalis* (see Knutson et al. 1975: 358; Thompson & Vockeroth 1989: 451-452); and 2) *aeneicincta* Meijere (1929, *Eristalis*), *distincta* Meijere (1913, *Eristalis*), *formosana* Shiraki (1930, *Eristalis*), *neptuna* Meijere (1911, *Eristalis*), *penangensis* Curran (1931b, Eristalis) and *perakensis* Curran (1928, *Eristalis*). These are represent new nomenclatural combinations.

The types of *Eristalis aeneicinctus* Meijere (1929: 380) were studied and a male from Buru has been labeled as lectotype to fixed and stabilize the concept of this species. The label data for the lectotype are: "Buru 1921 / Station 1 / leg. J. Toxopeus / 300 M / 8 - III," "Eristalis / aeneicinctus / det. de Meijere. / Type [in Meijere's hand except last line]. The lectotype is deposited in Zoölogisch Museum, Amsterdam (ZMAN).

***Lycastrirhyncha***. Neotropical; 5 species.

*Lycastrirhyncha* Bigot 1859: 307, type: *Lycastrirhyncha nitens* Bigot (Monotypy).

*Licastrirhyncha* Williston 1908: 256, misspelling.

*Lycastrirrhyncha* Curran 1934: 264, misspelling.

***Meromacroides***. Afrotropical; 1 species

*Meromacroides* Curran 1927: 69, type: *Eristalis meromacriformis* Bezzi (Original designation).

***Meromacrus***. Southern Nearctic, Neotropical; 43 species

*Plagiocera* Macquart 1842: 119, type: *Milesia cruciger* Wiedemann (Original designation) = *acutus* Fabricius. Preoccupied by Klug 1834 (Hymenoptera).

*Meromacrus* Rondani 1848: 70, type: *Meromacrus ghilianii* Rondani (Monotypy).

*Pteroptila* Loew 1866: 165, type: *Pteroptila decora* Loew (Subsequent designation by Coquil-

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lett 1910: 598).
*Plagiacera* Stahl 1883: 97, misspelling.
*Pteroptilia* Bigot 1883: 224, misspelling.
*Promilesia* Lynch Arribalzaga 1892: 241, type: *Promilesia nectarinoides* Lynch Arribalzaga (Monotypy).
*Metameromacrus* Hull 1942: 1, *nomen nudum*.
*Thalamopales* Hull 1949: 401, type: *Helophilus scitus* Walker (Original designation).

***Palpada***. Southern Nearctic, Neotropical; 85 species.

*Palpada* Macquart 1834: 512, type: *Palpada scutellata* Macquart (Monotypy) = *scutellaris* Fabricius.
*Doliosyrphus* Bigot 1882: 120, type: *Doliosyrphus scutellatus* Bigot (Subsequent designation by Williston 1887: 178).
*Dolyosyrphus* Bigot 1883: 228, misspelling.

***Phytomia***. Eastern Palaearctic, Afrotropical, Oriental to New Guinea; 15 species.

*Pachycephalus* Wiedemann 1830: 152, type: *Eristalis chrysopygus* Wiedemann (Subsequent designation by Knutson, et al. 1975: 356). Preoccupied Stephens 1826.
*Phytomia* Guerin-Meneville 1833: 509, type: *Eristalis chrysopygus* Wiedemann (Monotypy).
*Phytomyia* Scudder 1882: 263, emendation for *Phytomia*.
*Phytomyia* Kertész 1910: 244, emendation for *Phytomia*.
*Megaspis* Macquart 1842: 87, type: *Eristalis chrysopygus* Wiedemann (Original designation).
*Dolichomerus* Macquart 1850: 436, type: *Syrphus crassus* Fabricius (Original designation).
*Streblia* Enderlein 1938: 237, type: *Eristalis natalensis* Macquart (Original designation).

***Senaspis***. Afrotropical; 14 species.

*Senaspis* Macquart 1850: 437, type: *Senaspis flaviceps* Macquart (Original designation).
*Protylocera* Bezzi 1912: 415, new name for *Senaspis*.
*Triatylosus* Hull 1949: 398, type: *Xylota dibaphus* Walker (Original designation).

***Simoides***. Afrotropical; 7 species.

*Simoides* Loew 1858: 382, type: *Eristalis crassipes* Fabricius (Subsequent designation by Hull 1949: 399).
*Simioides* Hull, 1949: 399, misspelling.

**Note**: The valid name of the type species of *Simoides* is incorrectly given as *pachymera* Wiedemann by various authors (Curran 1939: 10; Smith & Vockeroth 1980: 506 & Peck 1988: 193). The valid name is *Simoides crassipes* (Fabricius). Wiedemann (1830: 171) selected *Eristalis crassipes* Fabricius (1805: 237) as senior to *Merodon crassipes* Fabricius (1805: 196) when he considered both names to apply to species of *Eristalis* and renamed *Merodon crassipes* as *Eristalis pachypus* (now *Meromacrus pachypus*).

***Solenaspis***. Oriental to New Guinea; 1 species.

*Solenaspis* Osten Sacken 1881: 442, type: *Solenaspis beccarii* Osten Sacken (Monotypy) = *nitens* Bigot.

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**"*Eristalis*" *dasyops* group**

**Note**: This group consists of *apis* Curran (1939, *Eristalis*), *dasyops* Wiedemann (1819, *Eristalis*), *plumipes* Bezzi (1912, *Eristalis*), and *pallidibasis* Bigot (1891, *Simoides*).

**"*Senaspis*" *apophysata* group**

**Note**: Bezzi (1915: 64) noted that his *Protylocera apophysata* did not fit *Senaspis*, but required a new genus. Again I leave this action to Kassebeer.

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