

The hoverfly genus *Eristalinus* Rondani, 1845 (Diptera: Syrphidae) in Hong Kong (Part 2)

Kelvin Wu Ka-Lun

Tsuen Wan, N.T., Hong Kong.

Email: kelvinklwu@gmail.com

ABSTRACT

The hoverfly genus *Eristalinus* Rondani, 1845 in Hong Kong was studied. Literature on the local hoverfly fauna and a total of 406 observation records from both the author and iNaturalist were reviewed. Eleven species were found to occur in Hong Kong, three of which have not previously been reported. A brief account of the morphology and ecology for each of these species was given.

Key words: *Eristalinus*, Syrphidae, Hong Kong

INTRODUCTION

Part 1 of this article reviewed the literature related to *Eristalinus* species and the observation records from both the author and iNaturalist (Wu, 2022). Brief accounts of five species with known identity were given. In Part 2, brief accounts are given of the remaining species, which have uncertain nomenclature, are unidentified or yet to be observed in the field.

MATERIALS & METHODS

Refer to Part 1 of this article.

RESULTS

Refer to Part 1 of this article.

DISCUSSION

The observation records from the author and iNaturalist indicate that there are 11 *Eristalinus* species recorded in Hong Kong to date, one of which was recorded for the first time in Hong Kong after Part 1 of this article was published. Amongst some of the 11 recorded species,

there is some phenotypic variability, which may indicate that additional species are present, but may alternatively be explained by within-species polymorphism; for the purposes of this paper, these individuals are not counted as separate species. These 11 species are divided into the following four categories:

- (1) Species with known identity
- (2) Species with uncertain nomenclature
- (3) Species which are unidentified
- (4) Species not yet observed in the field by the author

Part 1 gives a brief account of the species in Category 1. Brief accounts of the species in Categories 2 to 4, as well as the newly recorded species, are given in this article.

Category 1: *Eristalinus* species with known identity – new record

Eristalinus tristriatus (Meijere, 1911) (Figs. 1-2)

This tiny *Eristalinus* species was first recorded by the author on 27 December 2022. Its body length is only about 6 to 7 mm, the smallest among all known *Eristalinus* species in Hong Kong. In the field it looks more like a house fly (Muscidae) than a hoverfly because of its size and flying pattern. The frons is shiny black and this colour extends medially to the base of antennae in female. There are four creamy yellow vittae lying on both sides of the scutum, dividing the black background into three broad bands (hence the species name epithet). The middle two creamy yellow vittae are connected by a transverse line of the same colour at the posterior edge of the scutum. The scutellum is shiny black. Black posterior fasciae are present on tergites 2 to 4. Female individuals bear black median vittae on tergites 2 to 4; together with the posterior fasciae they form a series of inverted T-shape markings on the dorsal



Figure 1. *Eristalinus tristriatus* male. Photo by author.

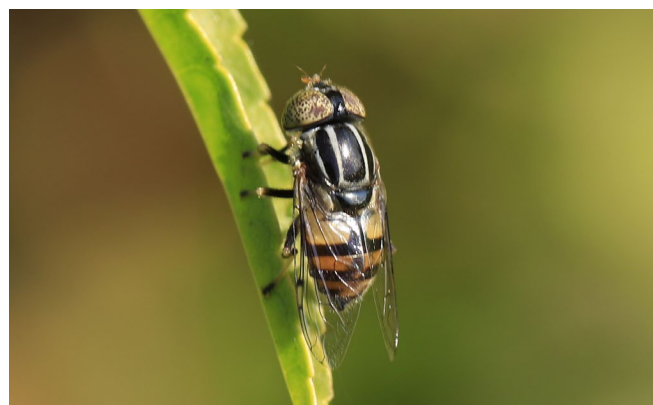


Figure 2. *Eristalinus tristriatus* female. Photo by author.

side of the abdomen. In males, only tergite 2 bears the median vitta. The femora are black, the tibiae and the tarsi are creamy yellow, except that the hind leg tibiae are black. The terminal tarsomeres are brownish black. Adults are recorded between December and March on flowers near fish ponds in the northwest New Territories. Its actual spatial and temporal distribution may however be wider as it may well be overlooked due to its small size.

Distribution (from Evenhuis and Pape, 2024): Java, Philippines, Negros.

Category 2: *Eristalinus* species with with uncertain nomenclature

***Eristalinus fasciatus* (Macquart, 1834)**

Other name: *Eristalinus multifarius* (Walker, 1852)
(Figs. 3-4)

This is the only *Eristalinus* species of the subgenus *Merodonoides* in Hong Kong. The maculation in the compound eyes is arranged in stripes instead of random spots. It has been known as *E. multifarius* (Walker, 1852) (e.g. Syrphidae Community Website, 2024) but is treated as a synonym of *E. fasciatus* by Evenhuis and Pape (2024). Ghorpadé (2019) mentioned that this may comprise several species which closely resemble each other. It has been erroneously identified in former Hong Kong publications as *E. paria* (Bigot, 1880) which also bears eye stripes. In fact the two are very different in appearance. The name *E. fasciatus* is adopted in this article following Evenhuis and Pape (2024).

The eyes of males only touch at a point right above the antennae. The creamy white bands surrounding the periphery of scutum are broad. The abdomen is subconical in shape, different from the oval shape in most other local *Eristalinus* species. There are creamy yellow bands at the posterior edges of tergites 2, 3 and 4. The legs are reddish brown. The hind femora are thickened with a narrow black ring about two-thirds from the base. The species occurs throughout the year but is more commonly seen in summer.

Distribution (from Evenhuis and Pape, 2024): India and Nepal to Vietnam, south to Java.



Figure 3. *Eristalinus fasciatus* male. Photo by author.

***Eristalinus megacephalus* (Rossi, 1794)**

Other names: *Eristalinus quinquelineatus* (Fabricius, 1781) / *Eristalinus laetus* (Wiedemann, 1830)
(Figs. 5-8)

This species is similar to *Eristalinus quinquestriatus* in appearance but with black legs and wider creamy white bands on the tergites. In males all creamy white bands nearly reach the lateral edge of the tergites, with a right-angle-rotated “H” black marking on tergite 2. In *E. quinquestriatus*, the foremost creamy white band occurs on tergite 3 and is much shorter, and the black marking on tergite 2 does not form the rotated “H” shape. The abundance of *E. megacephalus* in Hong Kong peaks in late summer / autumn. Some Hong Kong publications (e.g. Yiu et al., 2014) use the name *E. quinquelineatus* as adopted in Hervé-Bazin (1923) (see Figs. 7-8) and Huang and Cheng (2012), but Knuston et al. (1975) pointed out that this species is “not Oriental”. Ghorpadé (2019) mentioned that the name *E. quinquestriatus* is used for an African species with stripes of maculation on the eyes, and that the Asian species should be *E. megacephalus* or its close ally. *E. laetus* is recorded to occur in Hong Kong by Huang and Cheng (2012), but it is regarded as a synonym of *E. megacephalus* (Ghorpadé, 2019). The name *E. megacephalus* is adopted in this article.

Distribution (from Evenhuis and Pape, 2024): South Africa, Egypt; Sri Lanka, China, Taiwan, India, Java; Guam.

Category 3: Unidentified *Eristalinus* species

***Eristalinus* cf. *cinereus* (Meijere, 1924) (Figs. 9-12)**

This is a distinctive species in that (i) the scutum is mostly yellowish grey with no clear vittae, (ii) there is a brown translucent spot on the wings with smoked veins (unique among other local *Eristalinus* spp.), (iii) it has a thickened black hind femora, and (iv) there are broken black fasciae at the posterior edges of tergites, with those on tergite 3 bent forward in the middle. Characteristics (i) to (iii) above generally match with the original description of *E. cinereus* by Meijere (1924) based on a single female, the type specimen of which is deposited in Naturalis Biodiversity Center in Leiden, the Netherlands (see Fig. 12). From the habitus photos



Figure 4. *Eristalinus fasciatus* female. Photo by author.



Figure 5. *Eristalinus megacephalus* male. Photo by author.

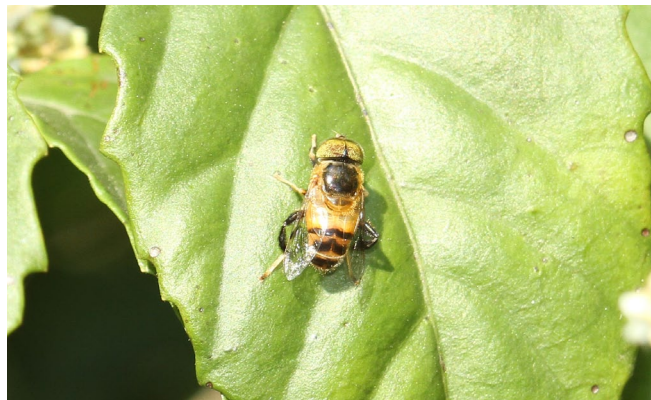


Figure 9. Possibly *Eristalinus* cf. *cinereus* male. Photo by author.



Figure 6. *Eristalinus megacephalus* female. Photo by author.

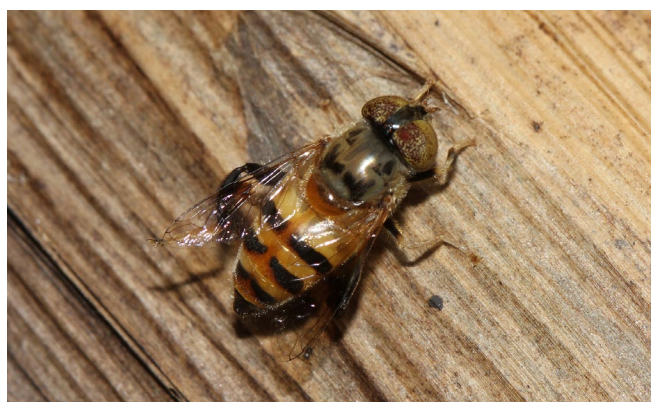


Figure 10. Possibly *Eristalinus* cf. *cinereus* female. Photo by author.

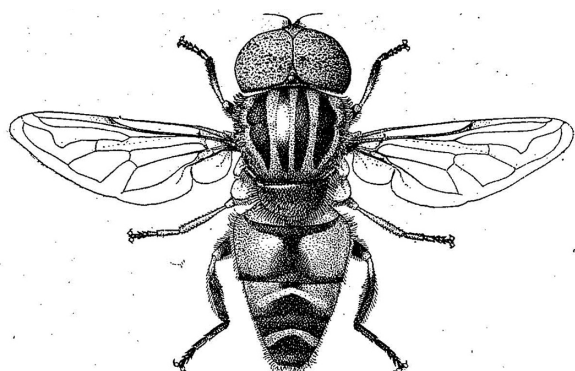


Fig. 13. — *L. quinquelineatus* F. ♂.

Figure 7. Illustration of *Eristalinus quinquelineatus* male in Hervé-Bazin (1923).

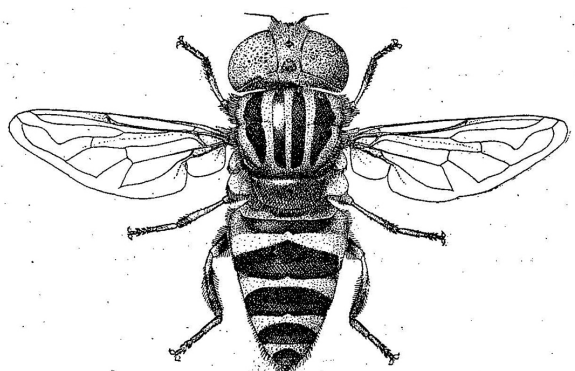


Fig. 14. — *L. quinquelineatus* F. ♀.

Figure 8. Illustration of *Eristalinus quinquelineatus* female in Hervé-Bazin (1923).

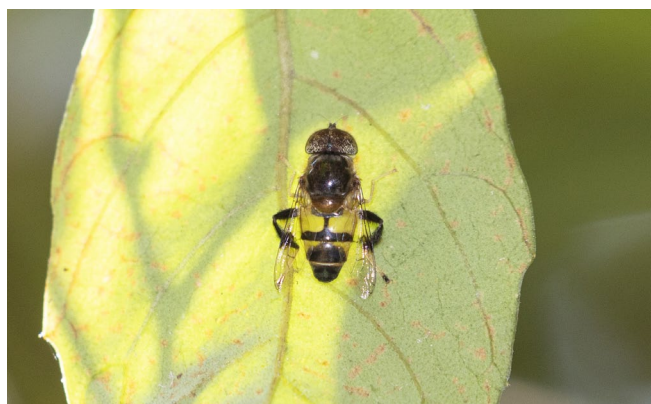


Figure 11. Possibly a melanistic form of *Eristalinus* cf. *cinereus* male. Photo by author.



Figure 12. Habitus photo of *Eristalinus cinereus* female type specimen. Photo courtesy of Naturalis Biodiversity Center, the Netherlands.

of this type specimen, however, it is noted that the black fasciae on tergites are complete without a break, unlike (iv) above. It is postulated that the Hong Kong species is at least closely related to *E. cinereus*, if not conspecific with slight variations.

There is no description of the male *E. cinereus* to the author's knowledge. In Hong Kong, an unidentified male *Eristalinus* species is deemed the male of *E. cf. cinereus*, as it shares with the female the features (i) to (iv) described above, which are unique among the local *Eristalinus* species. It is usually recorded in March. At the only locality that it has been found, individuals of similar morphology but with different tergite patterns

have been observed, in which the medially forward-pointing pairs of posterior fasciae on tergite 2 and 3 are merged together, and there is a median vitta on tergite 2 connecting the merged posterior fasciae to anterior edge. This may be a melanic form of the male *E. cf. cinereus* mentioned above. Further investigation is necessary to confirm the conspecificity of these species with *E. cinereus*.

Distribution (from Evenhuis and Pape, 2024) for *E. cinereus*: Sumatra.



Figure 13. *Eristalinus cf. nigroscutatus* male. Photo by author.



Figure 14. *Eristalinus cf. nigroscutatus* female. Photo by author.



Figure 15. Habitus photo of *Eristalinus nigroscutatus* male type specimen. Photo courtesy of Naturalis Biodiversity Center, the Netherlands.



Figure 16. Habitus photo of *Eristalinus nigroscutatus* female type specimen. Photo courtesy of Naturalis Biodiversity Center, the Netherlands.



Figure 17. *Eristalinus nitidus* female. Photo by author.

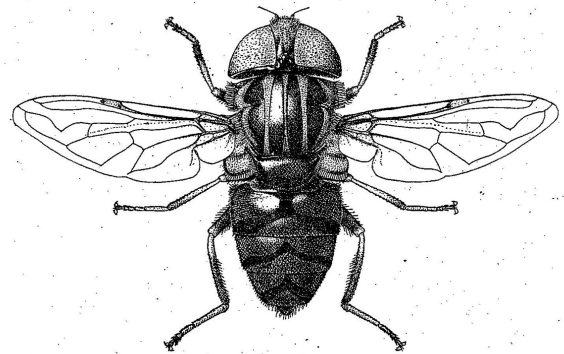


Fig. 25. — *L. nitidus* v. d. Wulp. ♀.

Figure 18. Illustration of *Eristalinus nitidus* female in Hervé-Bazin (1923).

***Eristalinus cf. nigroscutatus* (Meijere, 1911) (Figs. 13-16)**

This species has only been recorded in the northwest part of Hong Kong near Mai Po and Inner Deep Bay Ramsar site with large pieces of mangroves. Adults are sometimes found on the flowers of mangroves (e.g. *Aegiceras corniculatum*) and hide under leaves when disturbed. The medial creamy yellow longitudinal vitta on the scutum is narrower than other vittae, and there is a wider creamy yellow margin in the middle part of the posterior edge on the scutum, spanning over the end of three longitudinal vittae. The scutellum is blackish brown in males and black in females. The black bands on tergites 2 and 3 in males are in a dull blackish brown chevron shape. In females, tergites 2 and 3 are orange while the remaining tergites are shiny blackish grey, with posterior black fasciae extending forward medially. These are close to the original descriptions of *E. nigroscutatus* and the type specimens. The chevron band pattern is also unique among local *Eristalinus* species.

Distribution (from Evenhuis and Pape, 2024) for *E. nigroscutatus*: Borneo, Indochina, Java, Simeulue Island.

***Eristalinus nitidus* (Wulp, 1885) (Figs. 17-18)**

In the vicinity and around the same time of occurrence of the above *E. cf. nigroscutatus*, female individuals of an *Eristalinus* species with a shiny bluish grey abdomen and arcuate black fasciae on tergites 2 to 4 are usually found. It matches with the illustration of *E. nitidus* in Hervé-Bazin (1923) (see Fig. 18) as well as the original description by Wulp (1885). However, the type specimen of *E. nigroscutatus* deposited in Naturalis Biodiversity Center (see Fig. 16) looks very similar to *E. nitidus* in Hervé-Bazin (1923). Further studies are required to determine whether *E. nigroscutatus* and *E. nitidus* are synonyms.

Distribution (from Evenhuis and Pape, 2024) for *E. nitidus*: Java.

Category 4: *Eristalinus* species not yet observed in the field by the author

***Eristalinus sepulchralis* (Linnaeus, 1758)**

Lau (2019) recorded this species but I have not encountered it in the wild. It is not sure whether *E. sepulchralis* identified in Lau (2019) refers to other similar-looking, shiny black species such as *E. nitidus* and *E. tarsalis*, or melanic forms of other species.

Distribution (from Evenhuis and Pape, 2024) for *E. sepulchralis*: China, India, Europe.

An identification key to the Hong Kong *Eristalinus* species is included in Appendix 1.

ACKNOWLEDGMENTS

I would like to thank Tom Reader and Francis Gilbert for their supervision in my study and comments on the manuscript, Ximo Mengual for his opinions in the identification of species, as well as Cheung Che-man, Eric Tse and Rainbow Li for their passion in hoverflies and sharing of observation records.

REFERENCES

- Evenhuis, N.L. and Pape, T., 2024. *Systema Dipteriorum, Version 3.9*. Available from <http://diptera.org>, accessed on 8 March 2024.
- Fabricius, J.C., 1781. *Species Insectorum* 2. C.E. Bohnii, Hamburgi et Kionii. 494pp.
- Ghorpadé, K., 2019. Hover-flies (Diptera: Syrphidae) recorded from "Dravidia", or central and peninsular India and Sri Lanka. An annotated checklist and bibliography. *Indian Insects, Diversity and Science*. CRC Press: 325-388.
- Hervé-Bazin, J., 1923. Etudes sur les "*Lathyrrophthalmus*" (Diptera, Syrphidae) d'extrême-Orient. *Annales des Sciences Naturelles* 6: 125-152.
- Huang, C.M. and Cheng, X.Y., 2012. *Fauna Sinica, Insecta Vol. 50, Diptera: Syrphidae*. Science Press, Beijing, China. 852pp.
- iNaturalist, 2022. *Hover flies observations from Hong Kong*. Available from <https://www.inaturalist.org/projects/hong-kong-hover-flies>, accessed on 27 March 2022.
- Knutson, L.V., Thompson, F.C. and Vockeroth, J.R., 1975. Family Syrphidae. In: *A Catalog of the Diptera of the Oriental Region 2* (Delfinado, M.D. and Hardy, D.E., eds.). University Press of Hawaii, Honolulu, Hawaii: 307-374.
- Lau, C.S.K., 2019. *Checklist of Insects of Hong Kong*. Agriculture, Fisheries and Conservation Department, Hong Kong. 1058pp.
- Linnaeus, C., 1758. *Systema Naturae* (ed. 10). Laurentii Salvii, Holmiae. 824pp.
- Macquart, P.J.M., 1834. *Histoire Naturelle des Insects. Diptères*. Tome Première. Roret, Paris. 586pp., 12pls.
- Meijere, J.C.H. de, 1911. Studien über sudostasiatische Dipteren. VI. *Tijdschrift voor Entomologie* 54: 258-432, pls. 18-22.
- Meijere, J.C.H. de, 1924. Studien über sudostasiatische Dipteren XV. Dritter Beitrag zur Kenntnis der sumatranischen Dipteren. *Tijdschrift voor Entomologie* 67: 20.
- Rondani, C., 1845. Ordinamento sistematico dei generi italiani degli insetti ditteri [part]. *Nuovi Annali Scienze*

Naturali Bologna 1844(2)2: 443-459.

Rossi, P., 1794. *Mantissa insectorum, exhibens species nuper in Etruria collectas, adiectis Faunae Etruscae illustrationibus, ac emendationibus*. Polloni, Pisis. 2 vols, 148pp., 154pp., 8pls.

Syrphidae Community Website, 2024. Available from <https://syrphidae.myspecies.info/taxonomy/term/590>, accessed on 8 March 2024.

Walker, F., 1852. Diptera. Part III. In: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., & c.* 1 (Saunders, W.W., ed.). Van Voorst, London: 157-252, pls. 5-6.

Wiedemann, C.R.W., 1830. *Aussereuropäische zweiflügelige Insekten. Als Fortsetzung des Meigenschen Werks. Zweiter Theil*. Schulz, Hamm. xii+684pp., 5pls.

Wu, K.K.L., 2022. The hoverfly genus *Eristalinus* Rondani, 1845 (Diptera: Syrphidae) in Hong Kong (Part 1). *Hong Kong Entomological Bulletin* 14(2): 15-21.

Wulp, F.M. van der, 1885. Quelques diptères exotiques. *Bulletin et Annales de la Société Entomologique de Belgique* 28: cclxxxviii-ccxcvii.

Yiu, V., Yip, C.H., Yam, E.L.Y. and Wu, K.K.L., 2014. *A Photographic Guide to Hong Kong Insects*. Hong Kong Entomological Society, Hong Kong. 714pp.

APPENDIX

Key to Hong Kong *Eristalinus* species (Fig. 19):

1. Maculation on eyes randomly distributed. **2**
 - Maculation on each eye distributed in stripes.
 E. fasciatus
2. Scutum with prominent creamy white longitudinal vittae on dark background. **3**
 - Scutum with no creamy white longitudinal vitta. **11**
3. Tergites with creamy white / creamy yellow fasciae or spots. **4**
 - Tergites without creamy white / creamy yellow fasciae or spots. **13**
4. Tergite 4 and / or 5 with a pair of creamy white / creamy yellow spots. **5**
 - Tergites with creamy white fasciae only (no spots). **8**
5. A pair of creamy white spots on tergite 4 only, no fasciae or spots on other tergites. **6**
 - Creamy white / creamy yellow fasciae on tergites 2 to 4. **7**
6. Creamy white spots on tergite 4 in horizontal elongated oval shape; yellow median vitta on scutum with the same width as the other vittae. **6**
 E. arvorum male
 - Creamy white spots on tergite 4 in oblique comma shape; yellow median vitta on scutum narrower than the other four vittae. **7**
 E. obliquus male
7. A pair of oblique creamy yellow spots on tergite 5; tergites 2 to 4 with creamy yellow fasciae curved forward medially on brown background. **7**
 E. arvorum female
 - Pairs of oblique commas shape spots on each of tergites 3 to 5; posterior edge with near semi-circular black maculae extending forward medially. **8**
 E. obliquus female
8. All creamy white fasciae nearly extend to the lateral sides of tergites. **9**
 - Foremost creamy white fasciae very short, just wider than median black vitta. **10**
9. Tergite 2 without creamy white fascia. **10**
 E. megacephalus male
 - Tergites 2 to 4 with wide creamy white fascia. **11**
 E. megacephalus female
10. Foremost short creamy white fasciae at tergite 3. **11**
 E. quinquestriatus male
 - Foremost short creamy white fasciae at tergite 2. **12**
 E. quinquestriatus female
11. Scutum and nearly whole abdomen yellowish orange. **12**
 E. flavus
 - Scutum black or greyish brown. **13**
12. Scutum wholly black (male) or black with two thin vittae (female); abdomen black with pairs of creamy white maculae at least on tergites 3 to 4. **13**
 E. tarsalis
 - Scutum greyish brown with (female) or without (male) vague vittae; abdomen orange with broken black fasciae at the posterior edges of tergites 2 to 4. **14**
 E. cf. cinereus
13. Scutum with four creamy white vittae of uniform width on the sides without a median vitta; posterior black fasciae of tergites with straight edges. **14**
 E. tristriatus
 - Scutum with five creamy white vittae, the median one being the thinnest. **15**
14. Scutellum blackish brown; abdomen orange, with dull blackish brown chevron-like fasciae on tergites 2 and 3. **14**
 E. cf. nigroscutatus male
 - Scutellum black. **15**
15. Tergites 2 and 3 with orange maculae; posterior black fasciae and median black vittae on tergites 2 to 4. **15**
 E. cf. nigroscutatus female
 - Abdomen shiny bluish grey; tergites 2 to 4 with arcuate black fasciae. **16**
 E. nitidus

Appendix 1. Key to Hong Kong *Eristalinus* species.



Figure 19. Illustrations for the key to Hong Kong *Eristalinus* species.