

## Falkland Islands Syrphidae (Diptera)

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### Summary

*Platycheirus* (*Carposcalis*) *longigena* (Enderlein, 1912) is added to the Falkland Islands resident syrphid checklist, which already includes *Eristalis tenax* L. 1758, *Syrphus octomaculatus* Walker, 1837 and *Platycheirus* (*Carposcalis*) *bertrandi* (Austen, 1913). Records of *Carposcalis* sp., *Chaetocnephalia* sp. and *Eristalis bogotensis* Macquart, 1842, are resolved.

### Introduction

The Falkland Islands (a British Overseas Territory) lie between 51° S and 52° 30' S and 57° 45' W and 61° 30' W in the South Atlantic, with one outlying island, Beauchêne, lying about 50 km to the south at 52° 55' S and 59° 11' W. The archipelago, consisting of two large and about 700 smaller islands (total land area 12,173 km<sup>2</sup>), is situated about 700 km northeast of Cape Horn and 500 km east of the nearest part of the South American continent (Patagonia).

The islands, which lie on the submarine Falkland Plateau, were probably situated to the southeast of South Africa when the present continents were combined in Gondwanaland but this was millions of years before higher flies were known to exist. There are only two seasons in the Falkland Islands: summer (November to February) and a longer winter for the remainder of the year. Temperatures range from 19°C in January to 2°C in July, with a mean annual temperature of 6°C. Winter weather conditions are similar to those of southern England, but there are more hours of sunshine and snow is possible throughout the year. The semi-arid climate (average rain fall between 431 mm (West Falkland) and 630 mm (East Falkland) per year), gentle relief (highest point is 705 m) and widespread impermeable soils combine to produce areas of ground that remain wet throughout the year. Constant strong (average speed 16 knots) prevailing winds from South America to the west and dry summers prevent any trees from growing naturally and the natural vegetation is mostly grassland or dwarf shrub heath (Robinson 1984, Aldiss and Edwards 1999, Wagstaff 2001).

The main vegetation associations are: (1) Maritime tussock formation in coastal areas; (2) Oceanic heath formation, which covers most of the land area; (3) Feldmark formation dominated by cushion plants; (4) Bog formation comprising wet, swampy areas, and (5) Fresh water vegetation. 80-90% of the flora is also recorded from Patagonia and Tierra del Fuego (Davies and McAdam 1989).

The Falkland Island syrphid fauna was studied by AGJ as part of the wider Falkland Islands Invertebrate Conservation Programme (FIICP) involving fieldwork between September 2004 and September 2007. FIICP (the organisation that co-ordinates conservation

in the islands) is a Falklands Conservation programme supported by The Natural History Museum, London (BMNH) and the University Museum of Zoology, Cambridge, and funded by the Darwin Initiative (UK Department of Environment, Food and Rural Affairs: DEFRA). AWD collected syrphid material in 2005 and 2006; FCT collected syrphids at Port Stanley on 9 January 2002. The present paper records species captured during these studies and reference is also made to specimens held in the BMNH and records made by Robinson (1984, unpublished 2008).

Unless otherwise stated, specimens were collected (in Malaise traps or hand-held nets) by A.G. Jones (indicated by (1) in the records given below), A.G. and M. Jones (2), A. Wakeham-Dawson (3), H.J. and A. Wakeham-Dawson (4) or A., S., H.J. and H.W. Wakeham-Dawson (5). Unless otherwise stated, specimens listed below are deposited in AWD's collection. Examples will be donated to the Falklands Conservation collection (Stanley, Falkland Islands) and the University Museum of Zoology, Cambridge. Terminology follows that of Thompson (1999).

### The syrphid fauna

Three resident species of syrphid are currently known from the Falkland Islands: *Eristalis croceimaculata* Jacobs, 1900 (common), *Syrphus octomaculatus* Walker, 1837 (fairly common in gardens) and *Platycheirus (Carposcalis) bertrandi* (Austen, 1913) (abundant in all habitat types) (see Robinson 1984 and Jones 2004). *Eristalis tenax* (Linnaeus, 1758) was listed by Robinson but has not been recorded since 1984. To this list we add: *Platycheirus (Carposcalis) longigena* (Enderlein, 1912), which is common in all habitat types in the Falkland Islands, but was previously confused with *P. (C.) bertrandi*. There are several other Falklands syrphid records, which represent mis-identification or simply errors. The record of *Carposcalis* sp. (Beauchêne Island) (Robinson 1984) refers to *P. longigena*. The report of *Chaetocnephalia* sp. (West Falkland, Port Howard) in Robinson (unpublished 2008) is simply an error as this genus belongs to the family Tachinidae (Guimarães 1971: 174), not to the Syrphidae. The records of *Eristalis bogotensis* Macquart, 1842 (East Falkland, Stanley) by Robinson (unpublished 2008) and earlier authors merely reflect an obsolete classification (see below) and refer to *E. croceimaculata*.

The Dipteran fauna of the Falkland Islands is poorly documented. Austen (1913) was the first to report on it and his account was based on material collected by Rupert Vallentin (only one syrphid, *P. bertrandi*). Interestingly the earlier Swedish Skottsberg Expedition collected on the Falklands, but Enderlein (1912) reported no syrphids. Later Vallentin (1924: 370-371) added a few more flies to the list, including an unidentified *Melanostoma* species [= *P. longigena*]. So two syrphids were then known from the Falklands. Subsequently Riguelet (1956: 435) merely repeated Vallentin's list. After the 1982 Falklands War, much new material was collected and was passed along to the Natural History Museum. Robinson (1984) published the first checklist of the insects, including four syrphid species. Thompson in his revision of *Eristalis* (1997: 227) added another. Jones (2004: 21) listed three species and illustrated two in his insect guide.

### Identification

The syrphids of the Falklands are easily recognized as there are few species (in keeping with the generally impoverished Falklands insect fauna) and each is very distinctive in habitus. None of the species is endemic and there are: (1) two large species (14 - 16 mm) of the genus *Eristalis*, separated by head shape, eye pilosity and overall appearance; (2) one medium sized species (10 - 12 mm), *Syrphus octomaculatus*, which has 3 pairs of large orange spots on the

abdomen and a yellow face, and (3) two small species (6 - 8 mm) of the genus *Platycheirus* (subgenus *Carposcalis*): one entirely shiny black (*P. longigena*) and the other dull greyish pollinose and black (*P. bertrandi*).

### ***Eristalis (Eoseristalis) croceimaculata* Jacobs, 1900 (ERISTALINAE)**

**Type locality:** Argentina, Tierra del Fuego, Isla de los Estados, Golfe Saint-Jean.

**Range and biology:** *E. croceimaculata* is restricted to the south temperate regions of South America (Chile and Argentina). No other eristaline syrphid is known from so far south (Thompson 1997). Before the revision of the Neotropical *Eristalis* species, the name *bogotensis* was used for a wide-ranging species from Colombia to Tierra del Fuego. Thompson showed that this concept represented, in fact, two species, the southern component of which is *E. croceimaculata*. Hence, the records (Robinson unpublished 2008) of *E. bogotensis* from the Falklands refers to *E. croceimaculata*.

In the Falklands, *E. croceimaculata* adults fly from November to March (austral summer) and are common in all habitat types. *Eristalis croceimaculata* has probably been blown in by prevailing winds from southern South America. The adults feed at a range of nectar sources, including gorse (*Ulex europaeus*). This taxon is now a resident member of the Falkland Islands fauna and its interaction with *E. tenax* (see below), which appears to be no longer present in the islands, is unknown. Also, the question remains: did Vallentin miss this large, conspicuous species or was it absent and become established later on the islands?

**Diagnostic features:** large black and yellow hoverfly similar to *E. tenax* but with bare katepimeron and uniformly pilose eye, without the vittae of darker pile that are present in *E. tenax* (see below). Thompson (1997) illustrated the male genitalia.

**Records (adults):** **Hill Cove Forest (TC88), West Falkland:** 1♀, plantation, on spruce, by hand, 24.i.2004, (2); 1♀, plantation, on yellow flowers and yarrow *Achillea millefolium*, by hand, 27.i.2004, (2); 1♀, iii.1995, donated by Falkland Islands Department of Agriculture. **East Falklands:** Stanley Area, 7♂♂, 2♀♀, ix 1986, leg. Major C. Kirke, BM 1986-441, BMNH; 9♂♂, 3♀♀, 1-15.xii.1986, leg. Major C. Kirke, BMNH; 2♂♂, 5♀♀, 14-31.xii.1986, leg. Major C. Kirke, BMNH; 3♀♀, i.1987, leg. Major C. Kirke, BMNH. **Mount Pleasant:** 1♂, near fuel pumps on *Taraxacum*, 10.xi.2005, (3); 1♂, 1♀, 26.xi.2005, (5); 1♂, 4.ii.2006, (5); 6♀♀, on Brassicaceae, 12.ii.2006, (5). **Bleaker Island:** 5♂♂, on gorse, 14-17.xi.2005, (5). **Port Stanley (VC47):** 1♂, ix.1984-ii.1985, BMNH; 2♂♂, garden, captured by hand, 20.xi.2002, (1); 1♂, acid grassland, collected by hand, 26.xi.2002, (1); 1♀, in house, collected by hand, 18.xii.2002, leg. S. Goss; 1♂, on *Taraxacum*, 12.xi.2005, (4); 1♀, on Brassicaceae at Stanley Growers, 19.ii.2006, (3); 1♂, 3♀♀, garden, collected by hand, 10.iii.2006, (1); 1♀, 13.xii.2002, leg. Sniller; 4♀♀, collected on *Taraxacum*, 11.ii.2002, leg. B.J. & F.C. Thompson, USNM. **Saunders Island:** 1♂, 15-16.ii.2006 (5).

### ***Eristalis tenax* (Linnaeus, 1758) (ERISTALINAE)**

**Type locality:** Sweden.

**Range and biology:** Originally restricted to the Afrotropical, Oriental and Palaearctic regions where it is widespread and has been associated with humans; introduced into the New World, Australia, and New Zealand; absent from tropical areas. *Eristalis tenax* is represented from the Falkland Islands by only three specimens in the BMNH collection, captured in 1983-4 (see below) and was not found during the current study period. We are not aware that the local disappearance of this species has been mirrored by any other Falklands insect species.

**Diagnostic features:** large black and yellow hoverfly with pilose katepimeron and densely pilose eye with two vertical vittae of darker, contrasting pile. It is worth consulting Thompson (1997) when examining Falklands *Eristalis* specimens in case other South American species are blown to the islands.

**Records (adults):** **Port Stanley (VC47):** 1♂, i-ii. 1984, leg. I.J. Strange. **Roy Cove, West Falkland:** 1♀, 1983, leg. S. Whitley. **Hill Cove, West Falkland:** 1♂, 1983, leg. S. Whitley.

### *Syrphus octomaculatus* Walker, 1837 (SYRPHINAE)

**Type locality:** Chile.

**Range and biology:** Southern Chile and Argentina (Patagonia). In the Falklands, the adults fly from November to February (austral summer) and are fairly common in gardens.

**Diagnostic features:** medium sized black hoverfly with yellow face, yellow scutellum and six yellow spots on abdomen.

**Records (adults):** **Port Stanley (VC47):** 1♂, xi.1986, leg. Maj. C. Kirke, BM 1986-44I, BMNH; 1♂, 7.ii.1983, on pine trees, leg. I.J. Strange, BMNH 1983-59, BMNH; 1♂, garden, captured by hand, 4.xi.2002, leg. S. Blake; 12♀♀, on Brassicaceae at Stanley Growers, 19-21.ii.2006, (3); 2♂♂, 2♀♀, on *Taraxacum*, 11.i.2002, leg. B.J. & F.C. Thompson, USNM. **Mount Pleasant:** 1♂, ii.1987, leg. Maj. C. Kirke, BMNH. **Hill Cove (TC88), West Falkland:** 1♀, Hill Cove forest, plantation, by hand, 24.i.2004, (2); 1♀, improved grassland, by hand, 27.i.2004, (2). **East Falkland:** 1♂, 2♀♀, vegetable garden (E5), Malaise trap, 8.ii.2006, (1). **West Point Island:** 1♀, 7.i.1954, leg. R. Banks, BM 1954-150, BMNH.

### *Platycheirus (Carposcalis) bertrandi* (Austen, 1913) (SYRPHINAE)

**Type locality:** East Falkland Island.

**Range and biology:** southern South America, Chile (Magallanes) and Argentina (Tierra del Fuego). In the Falkland Islands, the adults fly between November and March and are abundant in all habitat types.

**Diagnostic features:** small hoverfly with grey pollinose face and maculae on the abdomen. Originally included in the genus *Melanostoma* Schiner, 1860, placed in *Carposcalis* Enderlein, 1938 by Thompson *et al.* (1976), but most recently Vockeroth (1990) has treated the group as part of *Platycheirus*. This and several closely related species occur in South

America (Austen 1913, Fluke 1945, Fluke 1957, Thompson *et al.* 1976). When Austen described the species, he mentioned additional specimens from Argentina, Chubut, Valle del Lago Blanco. Unfortunately, later workers overlooked this and the species was subsequently re-described as *P. reynoldsi* from Tierra del Fuego by Shannon and Aubertin (1933: 134). Thompson will publish illustrations of genitalia in a review of South American *Carposcalis* (in preparation).

**Records (adults): Port Stanley (VC47):** 5♂♂, 5♀♀, on pine tree, 13.i.1983, I.J. Strange, BMNH; 1♂, 6♀♀, xi.1986, leg. Maj. Kirke, BMNH; 5♂♂, 3♀♀, 1-15.xii.1986, leg. Maj. C. Kirke, BM 1986-441, BMNH; 17♂♂, 6♀♀, 14-31.i.1986, leg. Maj. C. Kirke, BMNH; 4♂♂, 10♀♀, i.1987, leg. Maj. C. Kirke, BMNH; 1♀, ii.1987, leg. Maj. C. Kirke, BMNH; 2♂♂, 6♀♀, on *Taraxacum*, 11.ii.2002, B.J. & F.C. Thompson, USNM; 1♀, rocky shore near Seaman's Mission, [captured by] hand, 16.xi.2002, (1); numerous ♂♂ and ♀♀, acid grassland near conifer plantation, Malaise trap, xi.2002, (1); 1♀, conifer plantation, [captured] by hand, 21.xi.2002, (1); numerous ♂♂ and ♀♀, garden, Malaise trap, 16.ii.2004, (2); 4♀♀, on Brassicaceae at Stanley Growers, 19.ii.2006, (3); 6♂♂, 6♀♀, in rough grass by road on *Taraxacum*, 12.xi.2005, (4). **Stanley (E3):** 1♀, d[warf] shrub, Malaise, 16.iii.2006, (1). **New Island:** 1♀, 5-6.i.1987, leg. Maj. C. Kirke, BMNH; numerous ♂♂ and ♀♀, grassland, Malaise trap, 22.ii.2006, (1). **Swan Inlet River:** 1♂, 1♀, on marsh daisy *Aster vahli* in boggy ground near the river, 12.ii.2006, (5). **Mount Pleasant:** 2♂♂, 4.ii.2006, (5). **Gipsy Cove, Stanley:** 1♂, 1♀ (small specimen), coastal vegetation, 16.xii.2005, (5). **Bleaker Island:** 1♀, Sandy Bay on beach; 1♀, diddle-dee *Empetrum rubrum* and pasture, 14-17.xi.2005, (5). **Hill Cove (TC88), West Falkland:** 1♂, 1♀, forest plantation, on spruce, by hand, 24.i.2004, (2); 1♂, numerous ♀♀, garden, Malaise trap, 23.i.2004, (2); numerous ♂♂ and ♀♀, improved pasture near plantation, on yarrow (*A. millefolium*) flowers, by hand, 27.i.2004, (2). **East Falkland:** ♂♂ and ♀♀, vegetable garden (E5), Malaise, 8.ii.2006, (1); 1♂, tussac grass (E2), Malaise trap, 13.iii.2006, (1). **Carcass Island (TD51):** ♂♂ and ♀♀ (mainly), M[alaise trap], 16-20.i.2006, (1); 1♀, Mal[aise trap], coastal vegetation (C1), 8 II [date?], (1); 1♀, Malaise, vegetable garden (C5), [date?], (1).

### *Platycheirus (Carposcalis) longigena* (Enderlein, 1912) (SYRPHINAE)

**Type locality:** Argentina, Tierra del Fuego, Ushuaia.

**Range and biology:** Tierra del Fuego and Falkland Islands. In the Falkland Islands, the adults fly between November and March and are common in all habitat types. Originally reported by Vallentin (1924: 370) as *Melanostoma* species.

**Diagnostic features:** small shiny black hoverfly, without pollinose face or maculate abdomen. Thompson will publish illustrations of genitalia in a review of South American *Carposcalis* (in preparation).

**Records (adults): Port Stanley (VC47):** 1♂, 3♀, xi.1986, leg. Maj. C. Kirke, BM 1986-441, BMNH; 1♂, 3♀, 1-15.xii.1986, leg. Maj. C. Kirke, BMNH; 14-31.xii.1986, leg. Maj. C. Kirke, BMNH; 1♂, 1♀, i.1987 leg. Maj. C. Kirke, BMNH; 1♂, 3♀♀, on *Taraxacum*, 11.ii.2002, B.J. & F.C. Thompson, USNM; 1♂, 1♀, d[warf] shrub (E3), Malaise, 16.iii.2006, (1); 1♀, rocky shore near Seaman's Mission, [captured by] hand, 16.xi.2002, (1); 2♀♀, acid

grassland near conifer plantation, Malaise trap, xi.2002, (1); 2♂♂ on Brassicaceae at Stanley Growers, 19.ii.2006, (3); 4♂♂, 7♀♀, in rough grass by road on *Taraxacum*, 12.xi.2005, (4). **Gipsy Cove, Stanley**: 1♀, coastal vegetation, 16.xii.2005, (5). **New House (UC78)**: 2♀♀, 9.xii.2002, leg. L. Anderson. **Mount Pleasant**: 1♀, ii.1987, leg. Maj. C. Kirke, BMNH; 1♀, (partially black; some grey dusting and abdominal markings more visible than in most *P. longigena* specimens; is this a *P. bertrandi* x *longigena* hybrid?), 12.ii.2006, (5). **New Island**: 1♂, 1♀, 5-6.i.1987, leg. Maj. C. Kirke, BMNH; 1♂, 1♀, grassland, Malaise trap, 22.ii.2006, (1). **Beauchêne Island**: 1♂, 2♀♀, xii.1980, rock 'tusset' grass, leg. R.I. Lewis-Smith, BMNH. **Swan Inlet River**: 4♀♀, on marsh daisy *Aster vahli* in boggy ground near the river, 12.ii.2006, (5). **Bleaker Island**: 2♂♂, 1♀, Sandy Bay on beach; 2♀♀, diddle-dee *Empetrum rubrum* and pasture, 14-17.xi.2005, (5). **Saunders Island, 'The Neck'**: 2♂♂, 4♀♀, on *Senecio candicans* on beach, 15-16.ii.2006, (5). **Roy Cove, West Falkland**: 2♀♀, 1.xii.2005, (5). **Long Island (VC28)**: 1♀, sandy shore, Malaise trap, 8.ii.2004, (2). **Lafonia (UC45)**: 1♀, in acid grassland, [captured by] hand, 22.xi.2002, (1). **Hill Cove (TC88), West Falkland**: 1♀, garden, Malaise trap, 23.i.2004, (2); 1♀, Crooked Street, 500 m. a.s.l, oceanic heath, Malaise trap, 4.ii.2004, (2). **East Falkland**: 1♀, vegetable garden (**E5**), Malaise, 8.ii.2006, (1); 3♀♀, coast (**E1**), Malaise trap, 13.iii.2006, (1); 3♀♀, tussac grass (**E2**), Malaise trap, 13.iii.2006, (1). **Carcass Island (TD51)**: 1♂, 1♀, M[alaise trap], 16-20.i.2006, (1). **Fitzroy**: 2♀♀, Malaise, [date?], (1). **Sea Lion Island**: 1♂, dwarf scrub, Malaise, 17.iii.2006, leg. M. Smart. **Jason Islands (TD03)**: 1♂, 1♀, tussac grass, Malaise, 7.ii.2005, (1).

### Acknowledgements

We thank Gaden Robinson and Nigel Wyatt (BMNH), Adrian Pont (Oxford), Falklands Conservation and the University Museum of Zoology Cambridge. AGJ's research was funded by the Darwin Initiative (DEFRA).

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