

LEPIDOPTERA OF THE FALKLAND ISLANDS: (1) PYRALOIDEA¹ ANDREW WAKEHAM-DAWSON AND ² ALEX G. JONES¹ Mill Laine Farm, Offham, Lewes, East Sussex BN7 3QB UK
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Downing Street, Cambridge CB2 3EJ UK**Abstract**

The Falkland Islands Pyraloidea fauna consists of three resident species in the family Crambidae. *Fernandocrambus falklandicellus* (Hampson) (sub-family Crambinae) and *Scoparia glauculalis* Hampson (Scopariinae) are widespread and common throughout the islands during the austral summer. *Crambus elongatus* Hampson, also widespread and common, is added to the list of resident species. *Udea ragonotii* (Butler) (Pyraustinae) is removed from the resident list and is probably a migrant/accidental from South America. Other accidental specimen records include *Ephestia* sp., *Nomophila* sp., *Pediasia*? sp. and *Pyralis farinalis* (Linnaeus).

Keywords: Lepidoptera, Pyraloidea, Falkland Islands, *Fernandocrambus falklandicellus*, *Crambus elongatus*, *Scoparia glauculalis*, *Udea ragonotii*.

Introduction

The Falkland Islands (a British Overseas Territory) lie between 51° S and 52° 30' S and between 57° 45' W and 61° 30' W in the South Atlantic, with one outlying island, Beauchêne, 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 km²), is situated about 700 km north-east 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 south-east of South Africa when the present continents were combined in Gondwanaland. 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 rainfall 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 Fuego (Davies & McAdam, 1989).

Pyraloidea fauna

The Pyraloidea consists of two families, based on the presence or absence of the praecinctorium between the paired ventral tympanic bullae of the abdomen (Solis, 2007). Consequently, the families are now regarded as Pyralidae (praecinctorium absent) and Crambidae (praecinctorium present). All Falkland Island resident species of Pyraloidea are members of the Crambidae. Robinson (1984) records three species of crambid moth from the Falkland Islands: *Fernandocrambus falklandicellus* (Hampson, 1895: 930) (sub-family Crambinae), *Udea ragonotii* (Butler, 1883: 59) (Pyraustinae) and *Scoparia glauculalis* Hampson, 1897: 233 (Scopariinae). These species are illustrated in Jones' (2004) field guide. To these pyraloids Robinson (unpublished 2008) adds *Ephestia* sp., *Nomophila* sp., *Pediasia?* sp., *Pyralis farinalis* (Linnaeus) and *Fernandocrambus* nr. *moskiewiczi* Bleszynski.

The Falkland Island pyraloid fauna was studied by AGJ as part of the wider Falkland Islands Invertebrate Conservation Programme (FIICP) fieldwork between September 2004 and September 2007. FIICP was a Falklands Conservation (the organisation that co-ordinates wildlife conservation on the Falkland Islands) programme supported by the 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 pyraloid material in 2005 and 2006. Specimens were captured by sweep netting, stalking with a net or in light traps.

The present paper records species captured during these studies and identified by male genitalia. Reference is also made to specimens held in the BMNH and records made by Robinson (1984; 2008). Captured material consists of three species *Fernandocrambus falklandicellus* (Hampson), *Scoparia glauculalis* Hampson and *Crambus elongatus* Hampson, 1919: 285 (Crambinae). *C. elongatus* is a Chilean species, which is previously unrecorded from the Falkland Islands. All three species were widespread throughout the islands during the austral summer (November to February). *Udea ragonotii* (Butler) was not present in our material. Further study needs to consider female genitalia and the ecology of these species. The records of *Ephestia* sp., *Nomophila* sp., *Pediasia?* sp., *Pyralis farinalis* (Linnaeus) and *Fernandocrambus* nr. *moskiewiczi* Bleszynski require further investigation.

Identification

Crambus falklandicellus (Hampson, 1895), *Proc. Zool. Soc. Lond.*, 1895: 930 (Crambinae)

PLATE 17

Original description: 'Pale golden brown; palpi white below. Fore wing with a white streak along basal half of costa, and a somewhat broad fascia from base through cell to outer margin below apex. Hindwing somewhat paler. *Hab.* Falkland Islands. *Exp.* 28 mm'.

The male genitalia are illustrated in Fig 1 [AWDF116] and are similar to syntype genitalia (BMNH Pyralidae slide no. 5535). This species appears to be common during December, January and February in grassland throughout the islands. Oram (1992) records this species in grass heathland at Hill Cove, West Falkland. A number of similar taxa have been named from southern South America (e.g. *Crambus radicellus* Hampson, 1895; Type Locality: Patagonia) and some of these may prove to be conspecific.

Crambus elongatus Hampson, 1919, *Ann. & Mag. N. Hist. Ser. 9, 3*: 285 (Crambinae)

PLATE 18

Original description: '♂. Head, thorax and abdomen white with a reddish ochreous tinge; antennae fuscous; palpi with some blackish at sides, white above and below; pectus and legs suffused with fuscous. Fore wing white tinged with reddish ochreous leaving the costal area pure white except towards base; irrorated with a few black scales especially in submedian interspace and beyond the cell; a terminal series of black points to vein 3; cilia pure white. Hind wing white with a slight reddish ochreous tinge, the cilia pure white. Underside of forewing suffused with fuscous brown, the terminal area white; hind wing white, the costal area tinged with brown. *Hab.* CHILI, Chillan, 8000' (*Elwes*), 2 ♂ type. *Exp.* 40 mm'.

There is only one *C. elongatus* syntype specimen currently present in the BMNH collection (drawer 191-127). The syntype is larger than our Falklands specimens, but the genitalia (BMNH Pyralidae slide no. 5541) are similar to those of the Falkland specimens. There is evidence that hind wings have been glued back onto this syntype, but no evidence that the abdomen has been glued on; the genitalia slide is probably reliable, unlike that of *S. glauculalis* (see below). The vesica has many large and smaller cornuti. The male genitalia are illustrated in Fig 2 [AWDF122]. This species has not previously been recorded from the Falkland Islands, even though it appears to be common during December, January and February in grassland throughout the islands.

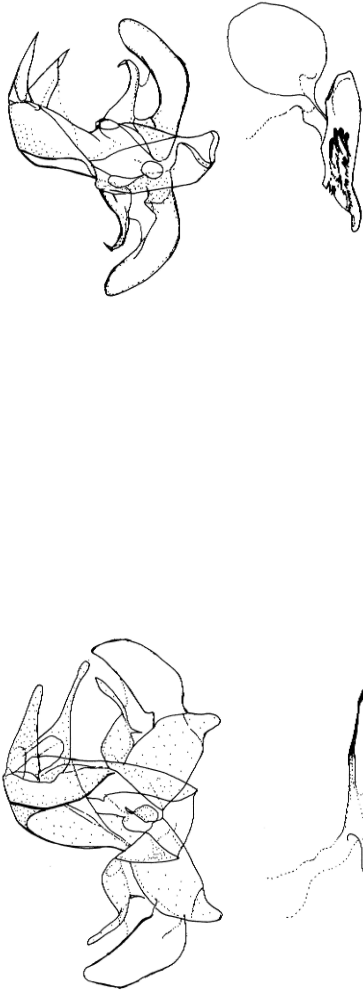


Figure 1. *Crambus falklandicellus* (Hampson, 1895), ♂ genitalia with aedeagus removed (prep. AWD F116); Falkland Islands: Mount Pleasant Airfield, 2-7.i.2006, leg. A., S., H.J. & H.W. Wakeham-Dawson, coll. AWD.

Figure 2. *Crambus elongatus* Hampson, 1919, ♂ genitalia with aedeagus removed (prep. AWD F122); Falkland Islands: Ajax Bay, 7.i.2006, leg. A., S., H.J. & H.W. Wakeham-Dawson, coll. AWD.

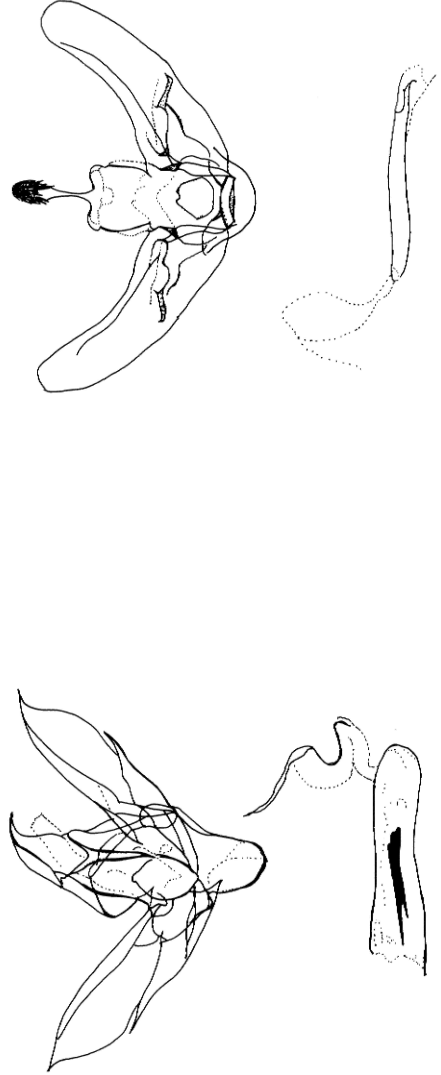


Figure 3. *Scoparia glauculalis* Hampson, 1897, ♂ genitalia with aedeagus removed (prep. AWD F125; BMNH Pyralidae Slide no. 22391); Falkland Islands: East Island, x.[19]08-ii.[19]09, leg. A. McReid, BMNH 1909-289.

Figure 4. *Udea ragonotii* (Butler, 1883), ♂ genitalia with aedeagus removed (prep. AWD F126; BMNH Pyralidae Slide no. 22392); Falkland Islands: East Island, x.[19]08-ii.[19]09, leg. A. McReid, BMNH 1909-289.



Plate 18. *Crambus elongatus* Hampson, 1919, ♂, Falkland Islands: Mount Pleasant Airfield, 2-7.i.2006, leg. A., S., H.J. & H.W. Wakeham-Dawson, coll. AWD (F121).



Plate 17. *Crambus falklandicellus* (Hampson, 1895), ♂, Falkland Islands: Mount Pleasant Airfield, 31.xii.2005, leg. A., S., H.J. & H.W. Wakeham-Dawson, coll. AWD (F118).



Plate 20. *Udea ragonotii* (Butler, 1883), ♂, Falkland Islands: East Island, x.[19]08-ii.[19]09, leg. A. McReid, BMNH 1909-289 (AWD F126; BMNH Pyralidae Slide no. 22392; BMNH Drawer 217-125; Mi 7904).



Plate 19. *Scoparia glaucalis* Hampson, 1897, ♂, Falkland Islands: East Island, x.[19]08-ii.[19]09, leg. A. McReid, BMNH 1909-289 (AWD F125; BMNH Pyralidae Slide no. 22391; BMNH Drawer 215-7; Mi 6546).

Scoparia glauculalis Hampson, 1897, *Trans. Ent. Soc. Lond.*, 1897: 233 (Scopariinae)

PLATE 19

Original description: '♂. Olive-grey. Forewing of glossy silky texture; traces of yellowish marks at middle and end of cell; outer area slightly darker. *Hab.* Falkland Islands. *Exp.*, 20 mm'.

The specimens in the BMNH *S. glauculalis* (drawer 215-7) series are similar to our material, but the genitalia (BMNH Pyralidae slide no. 3756) associated with a syntype have no resemblance to the male genitalia of *S. glauculalis* captured in the present study. However, examination of this syntype showed that a mis-associated abdomen (probably from a specimen of *U. ragonotii*) had been glued onto the moth. A new slide (BMNH slide no. 22391 [AWDF125]) of male genitalia has been made from a moth in the BMNH series and is illustrated in Fig. 3. This species appears to be common during January and February in grassland throughout the islands.

Udea ragonotii (Butler, 1883), *Trans. Ent. Soc. Lond.*, 1883: 59 (Pyraustinae)

PLATE 20

Original description: 'Primaries above sericeous cream-colour, irrorated with brown and black scales; veins pale sandy brownish; two arched indistinct brown streaks towards apex, the first oblique, the second parallel to the outer margin; a black spot just before the middle of the cell, and a second, rather larger, at the inferior angle of the cell; a marginal series of minute black dots; fringe sordid at apex; secondaries silvery pale grey, with two slightly darker spots placed obliquely at the end of the cell; a marginal series of minute black dots; fringe white; thorax whitish-brown; palpi long, acuminate, porrected, grey at the sides and white below; wings below grayish (the primaries especially), with black marginal dots and white fringe; body below white; the venter with lateral black dots; tarsi tipped with blackish. Expanse of wings, 24 mm. Valparaiso [Chile]'.

Although recorded as a resident species by Robinson (1984) and Jones (2004), *U. ragonotii* (Butler) was not present in our material; the single male Falkland Islands specimen in the BMNH series may be a migrant or accidental arrival from Chile or Juan Fernandez Island (the origin of the other BMNH *U. ragonotii* specimens). This specimen has been dissected (BMNH slide no. 22392 [AWDF126]) and is illustrated in Fig 4. These genitalia are similar to the syntype genitalia slide (BMNH Pyralidae slide no. 3755) and there is no evidence of a mis-associated abdomen.

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References

- Aldiss, D.T. and Edwards, E.J. 1999. *The geology of the Falkland Islands*. British Geological Survey Technical Report WC/99/10. i-x, 136pp. Nottingham.
- Davies, T.H. & McAdam, J.H. 1989. *Wild flowers of the Falkland Islands*. Falkland Islands Trust, Stanley. 48 pp.
- Jones, A.G. 2004. *Insects of the Falkland Islands*. 31 pp. Falklands Conservation, Stanley.
- Oram, D.A. 1992. The Falkland Island – an entomological snapshot. *Entomologist's Record*, **104**: 129-134.
- Robinson, G.S. 1984. *Insects of the Falkland Islands: a checklist and bibliography*. 38 pp. BM(NH), London.
- , 2008. *New records of insects from the Falkland Islands*. 7 pp. Unpublished.
- Solis, M.A. 2007. Phylogenetic studies and modern classification of the Pyraloidea (Lepidoptera). *Revista Colombiana de Entomologia*, **33**(1): 1-9.
- Wagstaff, W. 2001. *Falkland Islands; the Brandt travel guide*. Brandt, Buckinghamshire, UK. 182 pp.

Hazards of butterfly collecting – *Abantis eltringhami*, skipper extraordinary – Cameroun 2003

Skippers (Hesperiidae) have suffered much neglect when it comes to butterfly collecting, study, and documentation. On my home turf in Africa they are not included in the major catalogue published by Bernard D'Abrera, who did not consider them to be proper butterflies. They are also omitted from the huge book on the *Butterflies of Zaire* by Lucien Berger, though that was because Berger was working on a book on all African skippers and did not want to jump the gun. He did describe a number of new species in separate papers. Some new skippers have since been added to the African list mainly by Lee Miller and by Larsen & Collins in various papers, but the last full revision of the African skippers was in 1937.

It is now generally agreed that all skippers belong in the superfamily Hesperioidea that is distinct from all other butterflies in the superfamily Papilionoidea (this mirrors the older terms Rhopalocera and Grypocera). However, the two superfamilies are monophyletic, i.e. they share a common ancestor that differs from all the moths. Skippers are also largely day-flying insects that share the habitat and interact with other butterflies. Most modern books deal with them as well as with other butterflies, and I have done so since my first book (*Butterflies of Lebanon*) was published 35 years ago. My New Year's Resolution this year was to start writing a definitive book with the working title *Skipper butterflies of the Afrotropical Region* to make up for lost ground. The last detailed treatment of all the African skippers dates back to the *Catalogue of the African Hesperiidæ the British Museum*, a splendid effort from 1937 that is