

Observations on the Odonata of Silhouette, Seychelles Archipelago

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Abstract: 14 species of dragonflies and damselflies have been recorded from Silhouette Island, Seychelles following observations made in 1997, of these two have not been located since 1908. Only one species was confirmed breeding. Of the species expected to be found on Silhouette two could not be located.

Keywords: damselfly, dragonfly, Odonata, Seychelles, Silhouette.

Introduction

Campion (1913) and Blackman & Pinhey (1967) described the Odonata of the Seychelles Islands, including Silhouette, based on their own observations and collections of other entomologists. Two members of the British Dragonfly Society visited Silhouette from 17th to 24th November 1997. The following observations are based on that visit and these records extend the Silhouette species list of Gerlach *et al.* (1997).

Habitat

Silhouette is a granitic island rising steeply from the Seychelles Bank to 740 metres at the summit of Mont Dauban. It has narrow sandy beaches, few areas of coastal plateau, an extensive coral reef and many granitic *glacis* of bare rock. Previous attempts at coconut farming and coffee farming have introduced several alien plant species and the demise of formal agriculture has allowed many former tracks and trails to become minimal or defunct. Mont Pot à Eau and Mont Dauban are relatively inaccessible and have remnants of the surviving rain-forest.

Climate in 1997

1997 was atypical for the Seychelles Archipelago in general and Silhouette in particular. 500mm (20 inches) of rainfall were recorded in four days in August and 75mm (3 inches) in eight hours on 17th November (R. Gerlach pers. comm.). In consequence, all freshwater levels were abnormally high and areas described as *marais* were often water-filled pools with one to two metres of flooded margins, covering terrestrial grasses rather than aquatic rushes and sedges.

Locations

We were able to visit six defined locations in the time available (Fig. 1.). Three localities we did not visit because of adverse tides and inclement weather were Grande Barbe, Mare aux Cochons and Pointe Etienne. The latter two places were locations for previous records (before 1908) of the endemic *Seychellibasis alluaudi* (Martin, 1896), slender damselfly.

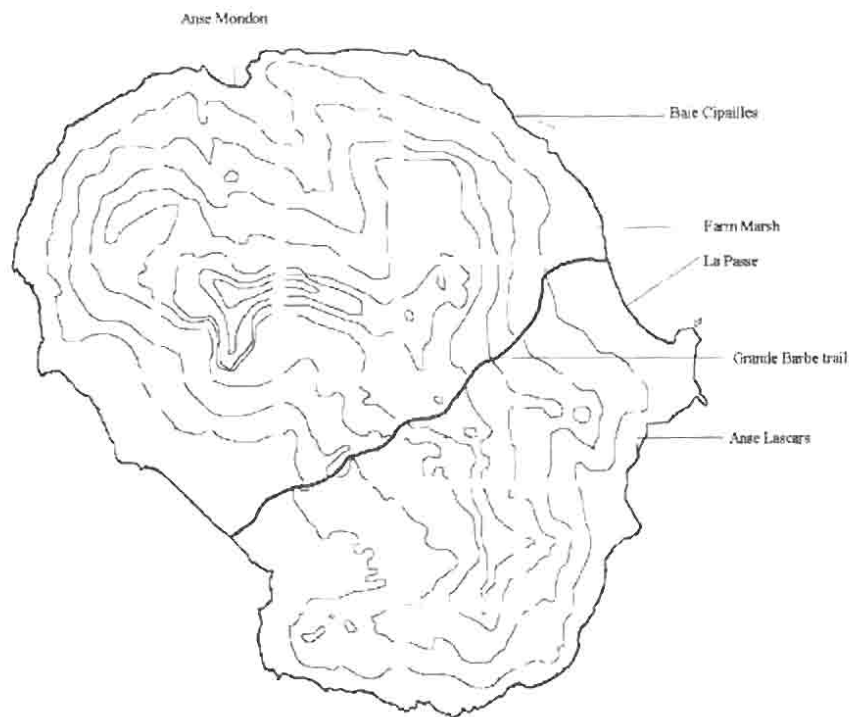


Fig. 1. Location of sites visited on Silhouette island.

The locations are listed in Table 1 in north-ascending order. They are all on the east side of the island and within easy access of the Silhouette Island Lodge.

Methods

Whenever possible, Odonata were caught by sweep-netting for definitive identification based on the key of Blackman & Pinhey (1967). Measurements of the captured insects were recorded for overall and abdominal lengths, total wing-span, hind wing length and size of pterostigmata. Photographs were taken through specimen boxes, hand-held individuals and perching individuals, both after release from the hand and on natural vegetation. If possible, both male and female specimens were caught for examination. Photography was used to record wing-venation and colouring, in addition to general records of colour and size of the insects. Similar methods have been described by Wain *et al.* (1998).

Evidence of breeding was based on combinations of observation of tandem-coupling, of cart-wheel pairs *in cop*, ovipositioning and collection and identification of

exuviae. The suggestion of Prendergast (1997) was followed for presumption of breeding status.

Observations

Species observed are listed in Table 1.

The Seychelles endemic Odonata, *Allolestes maclachlani* Selys, 1869 (black mountain damselfly), *Leptocnemis cyanops* (Selys, 1869) (blue-eyed forest damselfly) and *Zygonyx luctifera* Selys, 1869 (steely skimmer) were all found at low altitudes, less than 100 metres above sea level. *Zyxomma petiolata* Rambur, 1842 (ghost skimmer), a single female was flying along the beach at 15:00 hours.

Discussion

This limited survey of the Odonata of the island of Silhouette has recorded five new species for the island; *Zygonyx luctifera* (steely skimmer), *Zyxomma petiolata* (ghost skimmer), *Pantala flavescens* (Fabricius, 1798) (globe skimmer), *Tholymis tillarga* (Fabricius, 1798) (banded skimmer) and *Anax guttatus* (Burmeister, 1839) (amberwing emperor) (Table 1).

Table 1. Occurrence of Odonata at different locations on the east side of Silhouette

| Species | English name | Anse Lascars | La Passe | Grande Barbe trail | Farm Marsh | Bale Cipailles | Anse Mondon |
|-------------------------------|----------------------------|--------------|----------|--------------------|------------|----------------|-------------|
| <i>Allolestes maclachlani</i> | black mountain damselfly | | | present | | | |
| <i>Leptocnemis cyanops</i> | blue-eyed forest damselfly | | | present | | | present |
| <i>Ceriatrigon glabrum</i> | orange damselfly | present | present | present | present | | present |
| <i>Agriocnemis pygmaea</i> | pygmy firetail | present | | | present | | |
| <i>Diplacodes trivialis</i> | sky-blue chaser | present | present | | present | | present |
| <i>Orthetrum stemmale</i> | striped skimmer | present | present | | present | | present |
| <i>Zygonyx luctifera</i> | steely skimmer | | | | | | present |
| <i>Zyxomma petiolata</i> | ghost skimmer | | | | | present | |
| <i>Pantala flavescens</i> | globe skimmer | present | present | | present | | |
| <i>Anax guttatus</i> | amberwing emperor | | | | present | | |
| <i>Tramea limbata</i> | scarlet chaser | | present | | present | present | present |
| <i>Tholymis tillarga</i> | branded skimmer | | present | | present | | |

Z. luctifera is an endemic species for the Seychelles archipelago whereas *P. flavescens* and *A. guttatus* are strong fliers and pan-tropical (*P. flavescens*) or from the Asian sub-continent (*A. guttatus*). It is probable that as well as extending the Silhouette species list (Gerlach *et al.* 1997) the list may be revised to eliminate the synonyms (*Allolestes nigra* Martin, 1896 = *A. maclachlani* and *Leptocnemis bilineata* (Selys, 1869) = *L. cyanops*, as defined by Blackman & Pinhey 1967).

In comparison with the Odonata of Mahé (Wain & Wain pers. obs.), the endemic species recorded on this visit were all found at relatively low altitudes. This may reflect the lack of extensive cultivation beyond the coastal margin on Silhouette, since the endemic species usually found above 350 metres on Mahé were often associated with a vegetation transition from invasive coco-plum to endemic forest species. On Silhouette these forest tree species often followed rapid streams right onto the beach, especially at Anse Mondon, where *L. cyanops* was found within 10 metres of the shore-line and *Zygonyx luctifera* males were defending territory less than 200 metres from the beach and well below 50 metres above sea level.

Whilst the single female *Zyxomma petiolata* was patrolling a rocky beach with no fresh water in the immediate vicinity, personal observations in 1997 on Mahé and Praslin have included capture of this crepuscular species over fresh water within 10 to 50 metres of the beach.

Table 2. Presumptive breeding status of Silhouette Odonata.

| Species | English name | In tandem | In copula | Oviposition | Exuvia | Breeding |
|-------------------------------|----------------------------|-----------|-----------|-------------|--------|----------|
| <i>Allolestes maclachlani</i> | black mountain damselfly | | | | | possible |
| <i>Leptocnemis cyanops</i> | blue-eyed forest damselfly | yes | | | | probable |
| <i>Ceriatrion glabrum</i> | orange damselfly | yes | | | | probable |
| <i>Agriocnemis pygmaea</i> | pygmy firetail | | | | | possible |
| <i>Diplacodes trivialis</i> | sky-blue chaser | | | yes | | probable |
| <i>Orthetrum stenmale</i> | striped skimmer | | | yes | | probable |
| <i>Zygonyx luctifera</i> | steely skimmer | | | | | possible |
| <i>Zyxomma petiolata</i> | ghost skimmer | | | | | possible |
| <i>Pantala flavescens</i> | globe skimmer | yes | | yes | | probable |
| <i>Anax guttatus</i> | amberwing emperor | yes | yes | yes | yes | confirm |
| <i>Tramea limbata</i> | scarlet chaser | yes | | yes | | probable |
| <i>Tholymis tillagra</i> | branded skimmer | | | yes | | probable |

The largest population of *Agriocnemis pygmaea* Selys, 1877 was located at the Farm Marsh and, like the smaller population at Anse Lascars, had different markings from the population seen at Beau Vallon Bay on Mahé in December 1997 (Wain & Wain, pers. obs.). The minimal or absent orange colouring of the final abdominal segment of the male of *A. pygmaea* on Silhouette hindered the identification of this species. The whole of the thorax was covered in a blue pruinescence, unlike those on Mahé in which the thorax was entirely black. These differences warrant further investigation as to the absolute identity of the species.

Surprising omissions from this species list of Odonata are *Ischnura senegalensis* (Rambur, 1842) (African blue-tailed damselfly) and *Rhyothemis semihyalina* (Desjardins, 1832) (brunette chaser). Both of these common African species are present on Mahé (Blackman & Pinhey 1967) and on North Island (Wain et al. 1998) and suitable habitats for these two species were common on Silhouette. They are easily identified and their occurrence on North Island in the same period (Wain et al. 1998) suggests that they may indeed be absent from Silhouette. Further surveys may confirm their surprising absence.

Two species previously recorded from Silhouette (Campion 1913) were not recorded in 1997. We were unable to get to the two sites recorded for *Seychellibasis alluaudi* (slender damselfly) (last recorded in 1908) and we probably did not reach adequate altitudes in the evenings for *Gynacantha stylata* Martin, 1896. There are opportunities for further observations.

Only one species was confirmed as breeding on Silhouette, *Anax guttatus*, with the identification of exuviae as well as observed mating behaviour and ovipositioning. Possible and probable breeding was presumed for all the twelve species recorded in this limited survey (Table 2.) and detailed records from the island from future visits should permit confirmation of all of these species as breeding residents.

Summary

A week of field survey on a limited part of the island of Silhouette has identified five species of Odonata previously unrecorded, extending the species list to 14. All 12 species recorded in this survey showed some evidence of breeding. Opportunities exist for further work on the Odonata of Silhouette.

References

- Blackman, R.A.A. & Pinhey, E.C.G. 1967 - Odonata of the Seychelles and other Indian Ocean Island groups, based primarily on the Bristol University Expedition on 1964-65. *Arnoldia* 3(12); 1-38.
- Campion, H. 1913 - The Percy Sladen Expedition to the Indian Ocean in 1905; XVII Odonata. *Trans. Linn. Soc., Lond. (2. Zool.)* 15(4); 435-446.
- Gerlach, J., Matyot, P. & Saaristo, M. 1997 - Silhouette species list. *Phelsuma* 5 suppl. A.
- Prendergast, E.D.V. 1997- Evidence of breeding in Odonata; a personal view. *J. Br. Dragonfly Soc.* 13; 29-30.
- Wain, W.H., Wain, C.B. & Lambert, T. 1998 (in press) - Odonata of North Island, Seychelles Archipelago. *Odonatologica*