New and recent records of hawk moths (Lepidoptera: Sphingidae) from Seychelles, with a description of a new insular subspecies

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Abstract
In this study, we examine a recent sample containing two hawk moth species (Lepidoptera: Sphingidae) from Praslin and Mahé, Seychelles. It was widely accepted that the hawk moth species Temnora peckoveri (Butler, 1876) has a disjunctive range covering Madagascar and the Inner Seychelles. However, the Seychelles population of what was thought to be Temnora peckoveri shares a set of diagnostic morphological differences from both this species and T. fumosa (Walker, 1856) in the male genitalia structure. In particular, it remotely resembles Temnora fumosa based on the structure of aedeagus but differs from T. fumosa and T. peckoveri with respect to the harpe shape. Based on this evidence, we describe Temnora fumosa seychellensis Bolotov & Spitsyn ssp. nov. as a subspecies with restricted range, being endemic to the Inner Seychelles. The range of this subspecies covers Praslin (first record), Mahé, Silhouette, La Digue, Cousine, and Denis. Additionally, we report on recent occurrences of Agrius convolvuli from Praslin (second record) and Mahé. The adult moths were recorded feeding on inflorescences of Dracaena reflexa var. angustifolia Baker (Asparagaceae) for the first time. Finally, we present a complete list of Temnora fumosa seychellensis ssp. nov. and Agrius convolvuli occurrences from Seychelles.

Key words: Western Indian Ocean Islands, Inner Seychelles, granitic islands, island biogeography, endemism, speciation, insular subspecies, flower visitation, Dracaena.

Introduction
The Lepidoptera fauna of Seychelles is rather well known, with the maximum species richness on the country’s largest island, Mahé (Legrand 1966; Gerlach and Matyot 2006; Lawrence 2014). However, a growing body of faunal surveys revealed that the number of Lepidoptera species on smaller granitic islands such as Praslin and La Digue was largely underestimated (Bolotov et al. 2014b, 2015; Lawrence 2015; Bippus 2016; De Prins and Mazzei 2016). Several endemic species described from Mahé were recorded recently from Praslin (Bolotov et al. 2014a, 2016; Bippus 2016). Furthermore, alien Lepidoptera species arriving to Mahé could likely spread over surrounding islands of the archipelago (Kolosova and Bolotov 2020).
The hawk moths (Sphingidae) are among the largest and most attractive insects in Seychelles (Matyot 2005). The fauna of this family on the granitic and coralline islands was studied in detail, although the regional distribution patterns within the archipelago need further research (Legrand 1966; Matyot 2005; Gerlach and Matyot 2006; Lawrence and Henwood 2009). Moreover, there was a recent record of a hawk moth species new to the fauna of Seychelles (Lawrence 2015). In total, the hawk moth fauna of Seychelles contains 15 species, while the granitic islands house 10 species in this group (Gerlach and Matyot 2006; Lawrence 2015).

Figure 1. Occurrences of Temnora fumosa seychellensis ssp. nov.: (1) La Plaine Hollandaise, Praslin [the type locality]; (2) Beau Vallon, Mahé; (3) Marie-Laure, Bel Ombre District, Mahé; (4) Hermitage, Mont Fleuri District, Mahé; (5) L’Harmonie, La Misère, Mahé; (6) Anse Nord-Est, Mahé; (7) Silhouette; (8) Calou Guest House, La Digue; (9) Cousine; (10) Denis (see Table 1 for detail)
In this correspondence, we report on records of two hawk moth taxa, *Temnora fumosa seychellensis* ssp. nov. and *Agrius convolvuli* (Linnaeus, 1758), from the Inner Seychelles. The discovery of the first taxon was completely unexpected. It shares clear differences from *Temnora peckoveri* (Butler, 1876) and *T. fumosa fumosa* (Walker, 1856) in the male genitalia structure. This new insular subspecies is described here.

Materials and methods

The pinned specimens were studied in the RMBH – Russian Museum of Biodiversity Hotspots, N. Laverov Federal Center for Integrated Arctic Research of the Ural Branch of the Russian Academy of Sciences, Arkhangelsk, Russia. The genitalia were dissected, mounted on temporary glass slides with 70% ethanol and photographed using a research stereomicroscope (AXIO Zoom.V16, Carl Zeiss, Germany). The genitalia are kept in a micro-tube with glycerin pinned to the specimen. Images of specimens were taken with a Canon EOS 7D camera (Canon Inc., Tokyo, Japan). Available occurrences of the two target species on the islands of Seychelles were collected from published sources, and the localities were georeferenced using Google Earth v. 9.129.0.1 (Tables 1-2).

### Table 1. Occurrences of *Temnora fumosa seychellensis* ssp. nov. from Seychelles.

| Island  | Locality                  | Latitude | Longitude | Date    | Collector | N       | Reference                          |
|---------|---------------------------|----------|-----------|---------|-----------|---------|-----------------------------------|
| Praslin | La Plaine Hollandaise     | -4.3234  | 55.7262   | 08.ii.2016 | I. Bolotov | 1♂      | This study                        |
| Mahé    | N/A                       | N/A      | N/A       | 1892    | Philibert | 1       | De Joannis (1894); Gerlach and Matyot (2006) |
| Mahé    | N/A                       | N/A      | N/A       | 1909    | N/A       | 1       | Fryer (1912)                      |
| Mahé    | Beau Vallon               | -4.6153  | 55.4283   | 1960    | M. Gerber | 1       | Legrand (1966)                    |
| Mahé    | Marie-Laure, Bel Ombre District | -4.6158  | 55.4162 | N/A | P. Matyot | 1       | Matyot (2005)                     |
| Mahé    | Hermitage, Mont Fleur District | -4.6322  | 55.4535 | ii.1998 | P. Matyot | 1       | Matyot (2005)                     |
| Mahé    | L’Harmonie, La Misère     | -4.6658  | 55.4686   | 29.viii.1999 | P. Matyot | 1       | Matyot (2005)                     |
| Mahé    | Anse Nord-Est             | -4.5740  | 55.4610   | 02.iii.2005 | P. Matyot | 1**    | Matyot (2005)                     |
| Silhouette | N/A                      | -4.4848** | 55.2314** | 1908    | N/A       | 1       | Fryer (1912)                      |
| Silhouette | N/A                      | -4.4848** | 55.2314** | 1999    | J. Gerlach | 1       | Matyot (2005); Gerlach and Matyot (2006) |
| La Digue | Calou Guest House         | -4.3524  | 55.8348   | 13.viii.2009 | P. Mazzei | 1       | De Prins and Mazzei (2016)        |
| La Digue | Calou Guest House         | -4.3524  | 55.8348   | 26.iv.2014 | P. Mazzei | 1       | De Prins and Mazzei (2016)        |
| Cousine | The northern coastal plateau of the island | -4.3479  | 55.6469   | 25.iv.2009 | J. Lawrence | 1       | Lawrence and Henwood (2009)       |
| Denis   | N/A                       | -3.8035  | 55.6668   | 2003    | J. Gerlach | 1**    | Matyot (2005)                     |

*Approximate coordinates. **Larva (the others are imago). N/A – not available.
Table 2. Occurrences of *Agrius convolvuli* from Seychelles.

| Island   | Locality                                | Latitude | Longitude | Date          | Collector     | N   | Reference                                      |
|----------|-----------------------------------------|----------|-----------|---------------|---------------|-----|------------------------------------------------|
| Praslin  | Anse Kerlan                             | -4.3126  | 55.6850   | 27.viii.2016  | I. Bolotov    | 1♂  | This study                                     |
| Praslin  | Anse Boudin, main road, junction to     | -4.2986  | 55.7097   | 04.vii.2014   | M. Bippus     | 1♂  | Bippus (2016)                                  |
| Mahé     | Anse Forbans                            | -4.7809  | 55.5235   | 11.i.2020     | Y. Kolosova   | 1♀  | This study                                     |
| Mahé     | Anse Forbans                            | -4.7815  | 55.5229   | 13.i.2020     | I. Bolotov    | 1♂  | This study                                     |
| Mahé     | N/A                                     | N/A      | N/A       | 1892          | Philibert     | 1   | Philibert (1894); Gerlach and Matyot (2006)   |
| Mahé     | Port Victoria                           | -4.6206  | 55.4580   | 1909          | N/A           | 2♀  | Fryer (1912); Legrand (1966); Gerlach and     |
|          |                                         |          |           |               |               |     | Matyot (2006)                                  |
| Mahé     | Beau Vallon                             | -4.6153  | 55.4283   | 1956, 1959    | A. Dauban     | 5   | Legrand (1966)                                  |
| Mahé     | Saint Louis                             | -4.6261  | 55.4411   | 1959          | A. Delhomme   | 1   | Legrand (1966)                                  |
| Mahé     | Mount Fleuri                            | -4.6352  | 55.4583   | 1959          | Seychelles    | 1** | Legrand (1966)                                  |
| Mahé     | Hermitage, Mont Fleur District          | -4.6322  | 55.4535   | N/A           | P. Matyot     | ≥1  | Matyot (2005)                                  |
| Mahé     | La Misère                               | -4.6658  | 55.4686   | N/A           | P. Matyot     | ≥1  | Matyot (2005)                                  |
| Silhouette| N/A                                     | -4.4848**| 55.2314** | 1908          | N/A           | 1♂  | Fryer (1912); Gerlach and Matyot (2006)        |
| Silhouette| N/A                                     | -4.4848**| 55.2314** | 01.iv.1999    | J. Gerlach    | 1   | Matyot (2005)                                  |
| Silhouette| N/A                                     | -4.4848**| 55.2314** | 04.ix.2002    | J. Gerlach    | 1   | Matyot (2005)                                  |
| Aride    | N/A                                     | -4.2127  | 55.6662   | 1991, 1992, 2004 | N/A     | ≥5  | Bowler et al. (1999); Gerlach and Matyot       |
|          |                                         |          |           |               |               |     | (2006)                                         |
| Cousine  | The coastal flat on the NE side of the  | -4.3484  | 55.6480   | xi.1996       | J. Lawrence   | 1   | Lawrence (2005)                                |
|          | island                                  |          |           |               |               |     |                                                 |
| Cousine  | The coastal flat on the NE side of the  | -4.3484  | 55.6480   | 21.iii.1998   | J. Lawrence   | 1   | Lawrence (2005)                                |
|          | island                                  |          |           |               |               |     |                                                 |
| Cousine  | The coastal flat on the NE side of the  | -4.3484  | 55.6480   | xii.2002      | J. Lawrence   | 1** | Lawrence (2005)                                |
|          | island                                  |          |           |               |               |     |                                                 |
| Alphonse | N/A                                     | -7.0040  | 52.7304   | 1997          | R. & G. Gerlach| 1**| Matyot (2005); Gerlach and Matyot (2006)       |
| Aldabra  | Picard (West) Island                     | -9.4013  | 46.2063   | ix.1971 – vii.1972 | D. W. Frith | 8   | Frith (1979); Matyot (2005)                     |
| Atoll    | Island                                  |          |           |               |               |     |                                                 |
| Aldabra  | Picard (West) Island, Station           | -9.4013  | 46.2063   | 12.iii.1976   | N/A           | 1   | Matyot (2005)                                  |
| Farquhar | N/A                                     | -10.1217 | 51.1624   | 29.ix.1905    | T. B. Fletcher| 1** | Fletcher (1910)                                |

*Approximate coordinates. **Larva (the others are imago). N/A – not available.

**Taxonomy**

Family Sphingidae Latreille, 1802

Genus *Temnora* Walker, 1856

Type species: *Temnora natalis* Walker, 1856 [subsequent designation by Kirby, 1892] (De Prins and De Prins 2021).
Figure 2. Holotype male of *Temnora fumosa seychellensisssp. nov.* from La Plaine Hollandaise, Praslin, Seychelles, 08 February 2016. (A) Upperside. (B) Underside. Scale bar = 10 mm. (Photos: Elizaveta A. Spitsyna).
**Temnora fumosa seychellensis** Bolotov & Spitsyn ssp. nov.

= **Diodosida peckoveri** De Joannis (1894): 432 [Mahé].

= **Temnora fumosa peckoveri** Fryer (1912): 15 [Mahé, Silhouette]; Legrand (1966): 169, pl. 13, fig. 2 [Mahé, Silhouette]; Matyot (2005): 67 [Mahé, Silhouette, Denis]; Gerlach & Matyot (2006): 91 [Mahé, Silhouette, Denis].

= **Temnora peckoveri** Lawrence & Henwood (2009): 50, figs 1-2; De Prins & Mazzei (2016): 26, fig. 25 [La Digue].

Figs 1-5, Table 1.

**Type material.** Holotype male RMBH Sph0913 SEYCHELLES: Praslin Island, La Plaine Hollandaise, 4.3234°S, 55.7262°E, alt. 120 m, sedge-fern swamp with pandanus trees surrounded by palm-cinnamon forest, 08 February 2016, at UV light, Bolotov leg. (Fig. 2A-B).

**Diagnosis.** The new subspecies could be distinguished from *Temnora fumosa fumosa* based on the structure of harpe (Figs. 3-4). *T. fumosa fumosa* shares a long, narrow, sickle-shaped harpe (Fig. 4D). In contrast, the new subspecies shares a much wider and shorter, straight harpe with an upcurved, claw-like end (Fig. 4E). Furthermore, both the new subspecies and *T. fumosa fumosa* differ from *T. peckoveri* by the lack of a strong long tooth at the distal end of aedeagus (compare Fig. 4A, 4B, and 4C). The harpe of the new subspecies is much broader proximally and narrower distally compared with that of *T. peckoveri* (Fig. 4F).

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**Figure 3.** Male genitalia and aedeagus of *Temnora fumosa seychellensis* ssp. nov. (holotype) from La Plaine Hollandaise, Praslin, Seychelles, 08 February 2016. (A) Male genitalia (lateral view). (B) Aedeagus (lateral view). (Photos: Elizaveta A. Spitsyna).
**Description. Male** (Fig. 2): Wingspan 50 mm, forewing length 25 mm. Eye, antenna, and head dark olive. Labial palpus somewhat elongated (approximately two eye’s diameter), dark olive dorsally, light grey ventrally. Thorax, patagium, and tegula dark olive. Legs light grey, slightly darkened dorsally. Forewing outer margin with deep, rounded excavation below apex. Forewing upperside dark olive with broad darker brown antemedial and postmedial bands; postmarginal area greyish olive, with a dark, inconspicuous zig zag subterminal band and a small white spot at costa subterminally. Small white discal spot present. Forewing underside dark olive, with unclear blackish or dark brown triangular patch from the base to the discal area. Hindwing upperside uniformly dark brown with long dark olive scales. Hindwing underside dark olive, with a row of submarginal black spots and a dark patch between veins CuA1 and CuA2. Abdomen dark olive.

**Male genitalia** (Figs 3-4): Tegumen very broad, strongly sclerotized. Uncus bifurcated apically; uncus and gnathos form a typical macroglossine “bird-beak” structure. Valva slightly elongated, rounded apically. Harpe broad, straight, upcurved and pointed near the distal end. The base of harpe very broad. Aedeagus long, straight, with an oblique densely serrated ridge. Vesica long, with a bunch of ultra-elongate spines.

**Female:** Not examined.

**Etymology.** This subspecies is named after the Seychelles Archipelago, where it is distributed.

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**Figure 4.** Comparative analysis of the male genitalia and aedeagi of *Temnora fumosa fumosa*, *T. fumosa seychellensis ssp. nov.* (holotype), and *T. peckoveri* (Butler, 1876). (A-C) Distal end of the aedeagus (lateral view): (A) *T. fumosa fumosa*; (B) *T. fumosa seychellensis ssp. nov.*; and (C) *T. peckoveri*. (D-F) Valva and harpe (lateral view): (D) *T. fumosa fumosa*; (E) *T. fumosa seychellensis ssp. nov.*; and (F) *T. peckoveri*. The red arrow indicates a strong long tooth at the distal end of *T. peckoveri* aedeagus, a diagnostic feature of this species. (Photos: I. J. Kitching, Sphingidae Taxonomic Inventory Portal, Natural History Museum, London, UK [A, C, D, F; Kitching 2020a, b] and Elizaveta A. Spitsyna [B, E]).
Distribution. Endemic to the Inner Seychelles (Fig. 1). So far it is known to occur on the granitic islands of Mahé (De Joannis 1894), Silhouette (Fryer 1912), La Digue (De Prins and Mazzei 2016), Cousine (Lawrence and Henwood 2009), and Praslin (this study), and on the coralline island of Denis (Matyot 2005).

Habitat. The holotype was collected from a somewhat unusual habitat, i.e. at the middle of a continuous highland wetland densely covered by Ferns *Dicranopteris linearis* (Burm. f.) Underw. (Gleicheniaceae) and Bog Bulrush *Schoenoplectella mucronata* (L.) Jung & Choi (Cyperaceae), with patches of Nutrush *Scleria sumatrensis* Retz. (Cyperaceae) and groups of Horne’s Pandanus *Martellidendron hornei* (Balf. f.) Callm. & Chassot (Pandanaceae) (Fig. 5). However, the moth most likely came from the edge of surrounding mixed secondary forest dominated by various endemic palms and cinnamon trees. This forest patch also houses Indian Mulberry *Morinda citrifolia* L. (Rubiaceae), a host plant of this taxon on the Inner Seychelles (Matyot 2005).

Figure 5. Type locality and habitat of *Temnora fumosa seychellensis* ssp. nov.: sedge-fern swamp with pandanus trees surrounded by palm-cinnamon forest at La Plaine Hollandaise, Praslin, Seychelles. (Photo: Ivan N. Bolotov).

Conservation. The new subspecies appears to be Endangered [EN B1, B2 + ac(iii)]. It has an estimated extent of occurrence (EOO) of 330 km² and an area of occupancy (AOO) of 174 km² (Gerlach and Matyot 2006). Furthermore, it has a highly fragmented range, is known to occur on a few islands, and shares extreme fluctuations in number of subpopulations. Previously, this subspecies was accessed as Vulnerable [VU B1abiii, B2abiii] in Seychelles but that assessment was based on its earlier treatment as a population of the more widespread taxon *Temnora peckoveri* (see Gerlach and Matyot 2006).

Genus *Agrius* Hübner, 1819

Type species: *Sphinx cingulata* Fabricius, 1775 [subsequent designation by Tutt, 1902] (De Prins and De Prins 2021).
Agrius convolvuli (Linnaeus, 1758)

=Phlegetontius convolvuli De Joannis (1894): 432 [Mahé].

=Herse convolvuli Fletcher (1910): 282 [Farquhar]; Fryer (1912): 15 [Mahé, Silhouette]; Legrand (1966): 167 [Mahé, Silhouette, Farquhar]; Bowler et al. (1999): 51 [Aride]; Lawrence (2005): 96 [Cousine].

=Agrius convolvuli Frith (1979): 4 [Aldabra]; Matyot (2005): 60 [Mahé, Silhouette, Aride, Cousine, Alphonse, Farquhar, Aldabra]; Gerlach & Matyot (2006): 88 [Mahé, Silhouette, Aride, Cousine, Alphonse, Farquhar, Aldabra]; Bippus (2016): 36, pl. 1, fig. 4 [Praslin].

Table 2.

Material examined. SEYCHELLES: Praslin Island, Anse Kerlan, 4.3126°S, 55.6850°E, garden, 27 August 2016, at UV light, 1♂, Bolotov leg.; Mahé Island, Anse Forbans, 4.7809°S, 55.5235°E, ocean coast, in water after heavy rainfall, 11 January 2020, 1♀, Kolosova leg.; Mahé Island, Anse Forbans, 4.7815°S, 55.5229°E, garden, feeding on inflorescences of Dracaena reflexa var. angustifolia Baker, 13 January 2020, 1♂, Bolotov leg.

Distribution. Migratory species, which is widespread throughout Eurasia, Africa, Australia, Oceania (Pittaway 2020; Pittaway and Kitching 2020; De Prins and De Prins 2021), and islands of the Western Indian Ocean such as Seychelles, Mascarenes, Comoros, and Madagascar (Matyot 2005; De Prins and De Prins 2021). However, in several mainland regions it occurs rarely due to unknown reasons (Yakovlev et al. 2015; Knyazev 2020; Yakovlev and Volgin 2020). In Seychelles, it is known to occur on Mahé (De Joannis 1894), Praslin (Bippus 2016), Silhouette (Fryer 1912), Cousine (Lawrence 2005), Aride (Bowler et al. 1999), Alphonse (Matyot 2005), Aldabra (Frith 1979), and Farquhar (Fletcher 1910).

Flower visitation. We observed several individuals (one of which was collected) feeding on inflorescences of Dracaena reflexa var. angustifolia Baker (Asparagaceae) every evening during the period of 04–20 January 2020 (Anse Forbans, Mahé; Ivan Bolotov, pers. observ.). This observation expands the data on flower visitation of this species in Seychelles. It was noted that adult moths were observed hovering over Crinum asiaticum L. (Amaryllidaceae) and feeding from Hippobroma longiflora (L.) G. Don (Campanulaceae) flowers on Mahé (Matyot 2005). Lawrence (2005) observed adults feeding from flowers of Hymenocallis littoralis (Jacq.) Salisb. (Amaryllidaceae) on Cousine.

Comments. Second record from Praslin. In contrast, it frequently occurs on Mahé (Matyot 2005; this study).

Discussion

Initially, the Seychelles Temnora population was identified as belonging to the Madagascar species T. peckoveri using external diagnostic features alone (De Joannis 1894; Fryer 1912; Legrand 1966). Neither those earlier scholars nor recent researchers (e.g. Matyot 2005; Gerlach and Matyot 2006; Lawrence and Henwood 2009) have examined the male genitalia of this insular taxon. Our study revealed that it could easily be distinguished from both Temnora peckoveri and T. fumosa based on the harpe shape and aedeagus structure. These features are widely used to delineate species-level taxa within the genus Temnora (e.g. Kitching 2020c). However, we hesitate to establish a new species-level taxon in the absence of available molecular data, and prefer to consider it as an insular subspecies of Temnora fumosa for now. Future DNA-based studies are urgently needed to estimate the phylogenetic distinctiveness and biogeographic affinities of this subspecies from the Inner Seychelles.

There are four subspecies of Temnora fumosa (Walker, 1856): the nominate (mainland Sub-Saharan Africa: Burkina Faso, Cote d’Ivoire, Ghana, Nigeria, Cameroon, Gabon, Central African Republic, Congo, Uganda, Kenya, Rwanda, Tanzania, Zambia, and South Africa); T. fumosa albuquerqueae Darge, 1970 (São Tomé & Príncipe), T. fumosa chanudeti Turlin, 1996 (Comoros: Grande Comore and Mayotte) (Darge 1970; Turlin 1996; Kitching 2020b; De Prins and De Prins 2021), and T. fumosa seychellensis ssp. nov. (Inner Seychelles) (this study). In its turn, the range of Temnora peckoveri (Butler, 1876) seems to be restricted to Madagascar and its small satellite islands such as Nosy Bé (Saalmüller 1884; Butler 1876; De Prins and De Prins 2021). None of the Temnora species is known to occur on the Mascarenes (Attie et al. 2010) and the southern coralline islands of Seychelles (Matyot 2005; Gerlach and Matyot 2006; Lawrence 2015) that supports our taxonomic hypothesis on T. fumosa seychellensis ssp. nov. as a geographically isolated insular race.
It was shown that the butterfly fauna of the Inner Seychelles shares a closer affinity to continental Africa than to Madagascar and Comoros (Lawrence 2014). The hawk moth fauna of these islands also reflects this biogeographic pattern, with four endemic taxa: *Nephele leighi* Joicey & Talbot, 1921, *Cephonodes tamsi* Griveaud, 1960, *Macroglossum alluaudi* De Joannis, 1893, and *Temnora fumosa seychellensis* ssp. nov. (Matyot 2005; Gerlach and Matyot 2006; Lawrence 2015; this study). The first species appears to have become extinct around the 1970s (Gerlach 2012), while the others are highly threatened by anthropogenic activities such as habitat loss and using of pesticides, and need special conservation efforts (Gerlach and Matyot 2006; this study). The *Temnora fumosa – T. peckoveri* species complex appears to be an exciting model of lepidopteran insular radiation through the Western Indian Ocean islands that must be a focus of future phylogenetic, biogeographic, and taxonomic research.

Most Seychelles specimens of *Agrius convolvuli* were collected during the north-west monsoon (November to February) that may indicate its migrant origin on the archipelago (Matyot 2005). However, records from Praslin in July 2014 (Bippus 2016) and August 2016 (this study) do not align with this hypothesis. Our observation of adults feeding from *Dracaena reflexa* var. *angustifolia* inflorescence on Mahé seems to be useful for pollination ecology because *Agrius convolvuli* may serve as a pollinator of this tree, which is native to the Malagasy Subregion (Buerki et al. 2009). Several features of Dracaenas such as nocturnal flowering, strong fragrance during the late evening, and copious production of nectar on the inflorescence may be linked to pollination by animals having a nocturnal activity (Bos 1998). It was assumed that certain but unidentified hawk moth species are likely to serve as pollinators of *Dracaena* in Africa (Bos 1984, 1998). Conversely, *Agrius convolvuli* shares a long tongue and it may function as a nectar thief for plants with shorter flower tubes (Alexandersson and Johnson 2002). To the best of our knowledge, here we present the first evidence that the widespread *Agrius convolvuli* may be associated with Dracaenas as nectar sources.

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