

On the identity and early stages of *Choreutis aegyptiaca* from Réunion Island (Lepidoptera, Choreutidae)

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TREFWOORDEN

Afrotropical, Choreutidae, natural history, hostplant, synonym

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In a collection of Choreutidae, collected on Réunion Island and reared by the second author, the species *Choreutis aegyptiaca* (Zeller, 1867) was present. This moth has not previously been published from this island. However, a few years ago, another species was described from the island: *Anthophila latarniki* Guillermet, 2010. It is concluded that *A. latarniki* is a junior synonym of *C. aegyptiaca*. The specimens of *Choreutis aegyptiaca* were reared on *Ficus reflexa*, an unknown host plant for the species. The culture is being described and the life-stages are depicted. Furthermore, from the rearing results and specimens collected in the wild, it is concluded that on Réunion this moth has a flight period from the end of June until the beginning of September.

Introduction

Réunion Island is situated in the Indian Ocean, approximately 700 km east of Madagascar. It surfaced 2 million years ago due to volcanic activity, and is shaped by two volcanos, the extinct Piton des Neiges and the active Piton de la Fournaise. The volcanos are situated in the centre of the island and their slopes reach the sea. The climate is tropical with one wet, monsoon, season. The slopes of the volcanos are densely forested, but along the coast, where most of the human population lives, agriculture is present.

Because of the young geological age of the island, the insects must have arrived there relatively recently and adapted to the specific circumstances of this island. The Lepidoptera fauna mainly consists of species originating from the Afrotropical fauna, but introduced species are present as well. Because an island gives many opportunities for radiant developments, the present fauna is very interesting and worth examining.

This work is the result of the authors recently getting into contact, discussing the results of rearing of larvae from butterflies and moths. The second author collects and rears larvae, which he describes and documents by taking photographs of larvae, pupae, the emerging of moths, and their host plants. Together we were able to identify some reared moths. After this, the second author was so kind to donate moths from Réunion Island for inclusion into the collection of Naturalis Biodiversity Center (NBC) in Leiden, the Netherlands.

Among the specimens sent, *Choreutis* specimens were present, which the first author had come across before, during a survey in the United Arab Emirates (Gielis 2010). An examination of moths and their genitalia, and comparison of these with the illustrations in the monograph of Palaearctic species of this family by Diakonoff (1987), revealed that the species in question was *Choreutis aegyptiaca* (Zeller, 1867), a species not recorded from the island before.

Remarks on the taxonomy of *Choreutis aegyptiaca*

Choreutis aegyptiaca was described from Egypt. It has a wide distribution from Nepal and India to the west into northern Africa, and southwards in Africa as far as the Republic of South Africa (Diakonoff, 1986). In 1986, Diakonoff published a monograph on the Palaearctic species of the family Choreutidae. In this publication he listed *Eutromula hypocroca* Diakonoff, 1978 as a synonym of *C. aegyptiaca* (Zeller, 1867).

Recently Guillermet published a book series on the Lepidoptera fauna of Réunion Island. In 2011, he published the part that treats Choreutidae. This family includes a species he described in 2010: *Anthophila latarniki* Guillermet, 2010. After checking male and female genitalia of the specimens from Réunion Island, and comparing those with the publications of Diakonoff and Guillermet, as well as comparing specimens of *C. aegyptiaca* in the NBC collection, it appears that all specimens belong to the same species: *Choreutis aegyptiaca* (Zeller, 1867) and therefore we formally synonymize *A. latarniki* with *C. aegyptiaca*.

Choreutis aegyptiaca (Zeller, 1867) (*Simaethis*). Locus typicus: Egypt.
Eutromula hypocroca Diakonoff, 1978. Locus typicus: Nepal.
Anthophila latarniki Guillermet, 2010. Locus typicus:
Réunion Island. Syn. n.

Natural history of *Choreutis aegyptiaca* on Réunion Island

Recorded hostplants of *C. aegyptiaca* include *Ficus glomerata*, *F. infectoria* and *F. bengalensis* (Moraceae). The larvae from Réunion Island feed in a similar way as those from India (Fletcher 1933).

All reared specimens were collected from *Ficus reflexa*. This plant, endemic on Madagascar, Comores, Réunion Island, Mauritius, Seychelles, has not been mentioned before as host of *C. aegyptiaca*. However, an unknown species of Choreutidae had been reared from *F. reflexa* on Réunion Island by Martiré &



1. Early instar larva (top specimen) of *Choreutis aegyptiaca* creating skeletonizing on upper side of *Ficus reflexa* leaf. Photo: M. Bippus
1. Jonge rups (bovenste exemplaar) van *Choreutis aegyptiaca* die venstervraat veroorzaakt op bovenzijde van *Ficus reflexa*-blad.



2. Last instar larva *Choreutis aegyptiaca* with a roof spun between the margins of a leaf. Photo: M. Bippus
2. Laatste-stadium rups *Choreutis aegyptiaca* met een spinseldak tussen de randen van een blad.



3. Cocoon of *Choreutis aegyptiaca* on a leaf of *Ficus reflexa*. Photo: M. Bippus
3. Poppenspinseel van *Choreutis aegyptiaca* op een blad van *Ficus reflexa*.



4. Pupa of *Choreutis aegyptiaca*. Photo: M. Bippus
4. Pop van *Choreutis aegyptiaca*.



5. Emerging moth *Choreutis aegyptiaca*. Photo: M. Bippus
5. Uitkomende vlinder *Choreutis aegyptiaca*.

Rochat (2008). Comparison of our notes with the publication by Martiré & Rochat revealed that they most likely reared the same species. However, Guillermet (2011) was apparently not aware of the publication of Martiré & Rochat (2008), as he mentions that the natural history of the species was unknown.

We found larvae on the upper side of leaves of the fig tree, *F. reflexa*, where they skeletonized the leaf surface (figure 1). More than one larva may be present on a leaf. First and second instar larvae are pale yellow-green, with an indistinct pattern of pairs of darker dots on each segment. Later instars spin a silk web from the sides of the leaf, creating a rather loose roof over the larva (figure 2). In the web droppings are retained. The growing larva gradually develops a distinct brown-red colour and the pattern consists of a number of black dots on each segment. The dots are surrounded by a pale yellow margin (figure 2). Mature larvae pupate in an oval, dense white cocoon of 16 to 20 mm length (figure 3). The pupa is 5 mm long (figure 4).

In the National Park of La Réunion, at Grande Chaloupe, at an altitude of 600 m, larvae were observed from mid-April until mid-June. These larvae were not collected because we had no collecting permits for the National Park. In the same year numerous empty cocoons were noticed at La Possession, Ravine à

Malheur, altitude 400 meters, 20° 55' 37"S, 55° 21' 45"E, but also near the village of La Possession at sea level. All cocoons that contained a pupa were reared, belonged to *C. aegyptiaca*. Collecting and emerging of moths (figure 5) ranged from late June till early September, suggesting a long flight period, and a distribution from sea level to at least 600 meters. It is noteworthy that in breeding experiments, larvae refused leaves from *Ficus pumilla*, an other fig species growing on the island, and we could not find larvae on this fig in the wild.

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References

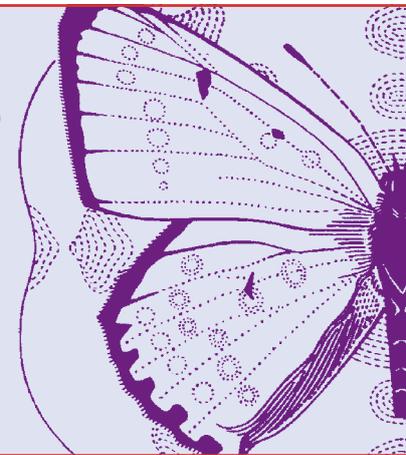
- Diakonoff A 1986. Choreutidae. In: Microlepidoptera Palaeartica: Glyphipterigidae. Vol. 7 (Amsel HG, Gregor F, Reisser H & Roesler RU): 61-213. Braun Verlag.
- Fletcher TB 1933. Life-histories of Indian Microlepidoptera (second series). Cosmopterygidae to Neopseustidae. Scientific Monograph of the Imperial Council of Agricultural Research 4: 1-85.
- Gielis C 2009. Order Lepidoptera, Family Choreutidae. In: Arthropod fauna of the UAE, 3 (Van Harten A ed): 552-553. Dar Al Ummah.
- Guillermet C 2010. Contribution à l'étude des Hétérocères de l'île de La Réunion: description de six nouvelles espèces de Tineidae, Oecophoridae, Gelechiidae et Choreutidae (Lepidoptera, Heterocera). L'Entomologiste 66: 125-132.
- Guillermet C 2011. Les Hétérocères, ou papillons de nuit, de l'île de La Réunion. Vol. 4. Parc national de La Réunion.
- Martiré D & Rochat J 2008. Les papillons de La Réunion et leurs chenilles. Mèze.

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Samenvatting

Herkennen en taxonomie van *Choreutis aegyptiaca* van Réunion (Lepidoptera: Choreutidae)

In de collectie van motvlinders die door de tweede auteur zijn gekweekt en verzameld van Réunion, bevond zich *Choreutis aegyptiaca* (Zeller, 1867). Deze soort was niet eerder vermeld van het eiland. Er was echter enkele jaren geleden een andere soort beschreven van het eiland: *Anthophila latarniki* Guillermet, 2010. We concluderen dat *A. latarniki* een junior synoniem is van *C. aegyptiaca*. De exemplaren van *C. aegyptiaca* waren gekweekt op *Ficus reflexa*, een niet eerder beschreven voedselplant voor deze soort. De kweek wordt beschreven en de levensstadia van de mot afgebeeld. Daarnaast wordt uit gecombineerde kweek- en vangstgegevens geconcludeerd dat *C. aegyptiaca* op Réunion van eind juni tot begin september vliegt.



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