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Praeacedes atomosella (Walker, 1863) and *Phereoeca praecox* Gozmány & Vári, 1973 - two case-bearing moths new to the Fauna of La Réunion (Lepidoptera: Tineidae)

With 9 figures

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Summary

Two species of Tineidae, *Praeacedes atomosella* (Walker, 1863) and *Phereoeca praecox* Gozmány & Vári, 1973 are recorded new to the fauna of La Réunion. Their biology is explained; larvae, adults and genitalia are illustrated.

Key words

Lepidoptera, Tineidae

Zusammenfassung

Zwei Arten von Tineidae, *Praeacedes atomosella* (Walker, 1863) und *Phereoeca praecox* Gozmány & Vári, 1973 werden erstmals für die Fauna von La Réunion erwähnt. Ihre Biologie wird erklärt, die Larven, Falter und Genitalien werden abgebildet.

Case-bearing moths are widespread throughout the tropics and I found them in most tropical countries that I visited. Though records of most species are rather scattered. In La Réunion none of the 2 recorded species seems to have been identified in the past although they are found in most houses. They are also common in warehouses and storage rooms.
I find their larval cases regularly at my home and its terrace throughout the year. Imago of an unidentified species from La Réunion that looks close to *P. praecox* were illustrated by Martiré & Rochat (2008) as "Mite à fourreau".

Both now identified species *Praeacedes atomosella* (Walker, 1863) and *Phereoeca praecox* Gozmány & Vári, 1973 are case-bearing moths.

The larval cases of both species are very similar in size (approximately 11–12 mm x 5,0–5,5 mm for the mature larvae) and coloration. The larval cases of *Phereoeca praecox* (Fig. 6) seem to be a little larger, with the shape of a pumpkin seed while cases of *Praeacedes atomosella* are more elongated (Fig. 5). They are constituted of fibres and wool (including synthetic textiles), hairs, grains of sand, small flakes of paint and insect detritus. The coloration of the larval cases is mostly greyish though their might be some variations. These moths seem to pick up almost anything suitable for the construction of their cases and I also found red textiles and flakes of blue paint on their cases.
The larval cases have two openings, one on each end. The larvae turns around inside the case and does not seem to have a preference for one of the openings. The larval case

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serves as pupal cocoon. The larvae of both species seem to have similar size and markings. Zimmermann (1978) illustrated the larvae of *Praeacedes atomosella* (Walker, 1863) (as *Praeacedes thecophora* Walsingham). They are of cream colour with blackish-brown markings on the thoracic segments.
Their heads and first segment are predominantly dark brown-blackish. *P. atomosella* has several blackish markings on the segments 2–4 (Fig. 5), while *Phereoca praecox* shows only one large mark on each side of the segments 2–3 (Fig. 6).
Both species feed on insect detritus. Although there are mentions on species of their genus that might feed on pigeon dung (Zimmermann, 1978), clothes, bird feathers or spider webs (Arakelian, 2010) I had the impression that many of former notifications of food sources might be erroneously reported. Martiré & Rochat (2008) illustrated images of a species close to *P. praecox* that they also recorded in lava tubes where it might feed on guano or detritus left from Mascarene swiftlets (Aves: *Aerodramus francicus* (Gmelin, 1789)). I also find regularly their cases suspended near spider webs though I believe that they were attracted by the insects caught in the spider webs or their remains. It might be notable that I often find other arthropods as Acari Leach, 1817 on the insect detritus and I cannot exclude that the moths larvae might also feed on them.
Locality: all specimen were collected in La Réunion, La Possession, 400 m, 20°55'30"S/55°22'52"E.

Methods: All of my identified specimen were raised from larvae. Living larvae were mostly collected on the terrace (80 %) of my home in Réunion. Some few specimen were collected inside the house (20 %). All of them had developed larval cases of different sizes (length between 6 and 12 mm) at the moment of collection. Tissue paper was added on the bottom of all recepients in which I kept the larvae.
At the first attempts I added next to dead insects (mosquitoes, flies, moths) also other possible food to the larvae boxes, like bread, hairs, cotton tissue, some leaves, spider webs and gecko excrements. Often I tried to observe the reaction of the caterpillars and mostly they were attracted only by the insect detritus. I never observed them feeding on the other purposed food and finally stopped adding supplementary food sources. Also larvae fed exclusively on dead insects over a period of 4 weeks reached maturity and I believe that the other materials are only used for case building. These moths prefer a dry habitat. Moistering the recepients resulted in a higher mortality.

Both species *Praeacedes atomosella* and *Phereoeca praecox* are rarely attracted to light. Though all of my raised specimen provide from my own house I could not identify any specimen caught at the same site in my light trap. All similar looking Tineidae proved to be of other genera after dissection.

Pupal stage: seems to be rather variable, I recorded between 16 and 30 days (for both species).

Parasites: Several specimen of both species were paratized by a Braconidae: *Apanteles minatchy* Rousse & Gupta, 2014 (identification: Pascal Rousse, France).
Zimmermann (1978) noted *Apanteles carpatus* (Say, 1836) as a parasite of *Praeacedes atomosella* in Hawaii.

Praeacedes atomosella (Walker, 1863)

Wingspan: 11,5–12,5 mm (Fig. 1, 2, 5; Fig. 8, 9).
This pantropical species was described from Sierra Leone. It is also known from the Canary islands and Mediterranean islands (Cyprus, Malta), Neotropical region (Bermuda, Brazil, Peru, Venezuela, Mexico, southern United States), Oriental region (India, Malaysia) (de Prins & de Prins, 2015; Zimmermann, 1978), Australia (Robinson & Nielsen, 1993) and Oceania (Solomon Islands, Rapa) (Zimmermann, 1978). Records from Africa include The Gambia and the neighboring islands of Mauritius and Madagascar (de Prins & de Prins, 2015). Zimmermann (1978) described and illustrated adults, male and female genitalia as well as its larvae & larval cases from Hawaii (as *Praeacedes thecophora* Walsingham).

The adults (Fig. 1–2) have a wingspan of 11,5–12,5 mm and its forewings are brownish fuscous. Its male genitalia is rather recognizable by its forked aedeagus and black gnathos (Fig. 9). Bursae of the female shows 2 irregular, oval signa (Fig. 8b).

Specimen: more than 40 specimen were bred from larvae.
2015 - months: II, IV, VII (male, gen.prep. RE-1946), IX (female, gen.prep.RE-2116; male, gen.prep. RE-2108), X (female, gen.prep. RE-2182), XII.
2016 - months: I, II.

Phereoeca praecox Gozmány & Vári, 1973

Wingspan: 12,0–13,0 mm (Fig. 3, 4, 6, 7).
In continental Africa this species had been recorded from Ghana, Nigeria, Sierra Leone and The Gambia (Gozmány & Vári, 1973). More recently this species had been recorded from Australia (Robinson & Nielsen, 1993) and California, USA (Arakelian, 2010).

The adults collected in La Réunion have a wingspan of 12–13 mm (Fig. 3–4). Forewings are beige-brownish with 3 darker brownish markings. This species seems to be rarer than *P. atomosella* and only three female were bred from larvae.

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Female genitalia: this species can be distinguished from other *Phereoeca* species by the triangular projections on the aphosyses (Fig. 7).

Specimen: 3 female, all ex-larvae: 11.vi.2015, 18.vi.2015 (gen.prep. RE-1895), 22.i.2016.

References

Arakelian, G. 2010: Plaster bagworm (*Phereoeca praecox)*. – Pest bulletin of Los Angeles County Department of Agricultural Commissioner. – DOI: 10.13140/2.1.4263.7122. http://www.researchgate.net/profile/Gevork_Arakelian/publication/270580429_Plaster_bagworm_Phereoeca_praecox)._Pest_bulletin_of_Los_Angeles_County_Department_of_Agricultural_Commissioner/links/54aeba1c0cf21670b3586f1b.pdf?origin=publication_detail.

De Prins, J. & De Prins, W. 2015: Afromoths, online database of Afrotropical moth species (Lepidoptera). – World Wide Web electronic publication (www.afromoths.net) [acc.03.Nov.2015].

Gozmány, L. A. & Vári, L. 1973: The Tineidae of the Ethiopian Region. – Transvaal Museum Memoir **18**: I–VI: 1–238, 570 figs. http://content.ajarchive.org/cdm4/document.php?CISOROOT=/0000012&CISOPTR=311&REC=15.

Robinson, G. S. & Nielsen, E. S. 1993: Tineid Genera of Australia (Lepidoptera). – Monographs on Australian Lepidoptera. Canberra: CSIRO; **2**: I–XVII, 1–344, 734 figs.

Martiré, D. & Rochat, J. 2008: Les papillons de La Réunion et leurs chenilles. – Muséum national d'Histoire naturelle, Paris ; Biotope, Mèze: 1–496.

Zimmerman, E. C. 1978: Microlepidoptera, Part 1. Monotrysia, Tineoidea, Gracillarioidea, Yponomeutoidea and Alucitoidea. – Insects of Hawaii **9** (1): I–XVIII + 1–888, pls 1–8. http://scholarspace.manoa.hawaii.edu/handle/10125/7338.

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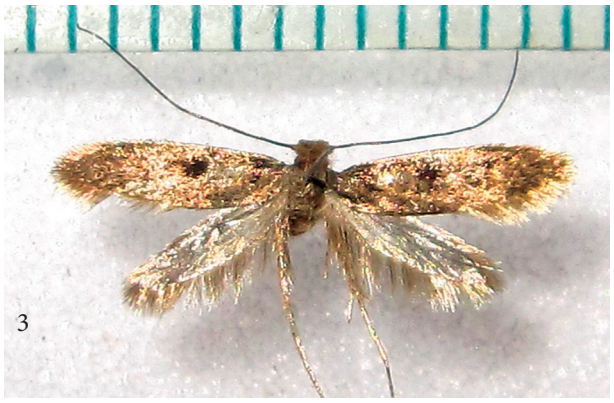

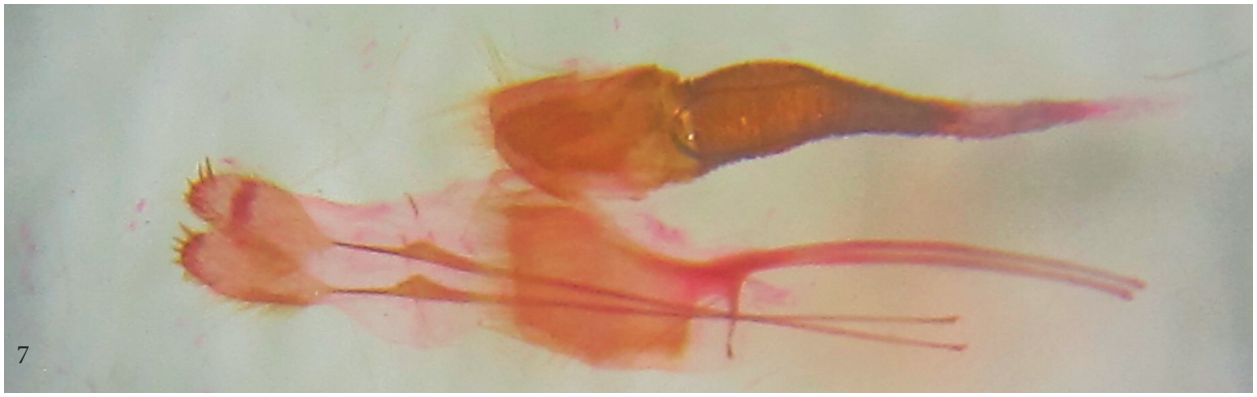

Fig. 1: *Praeacedes atomosella*, adult, 12 mm. – **Fig. 2**: *Praeacedes atomosella*, adult. – **Fig. 3**: *Phereoeca praecox*, adult, 12,5 mm. – **Fig. 4**: *Phereoeca praecox*, adult. – **Fig. 5**: larvae of *Praeacedes atomosella.* – **Fig. 6**: larvae of *Phereoeca praecox*. – **Fig. 7**: *Phereoeca praecox*, female genitalia.

Fig. 8 (opposite): *Praeacedes atomosella*, female genitalia; **8b** – detail signa. – **Fig. 9**: *Praeacedes atomosella*, male genitalia; **9a**: ventral view, pressed; **9b**: latteral view; **9c**: aedeagus.

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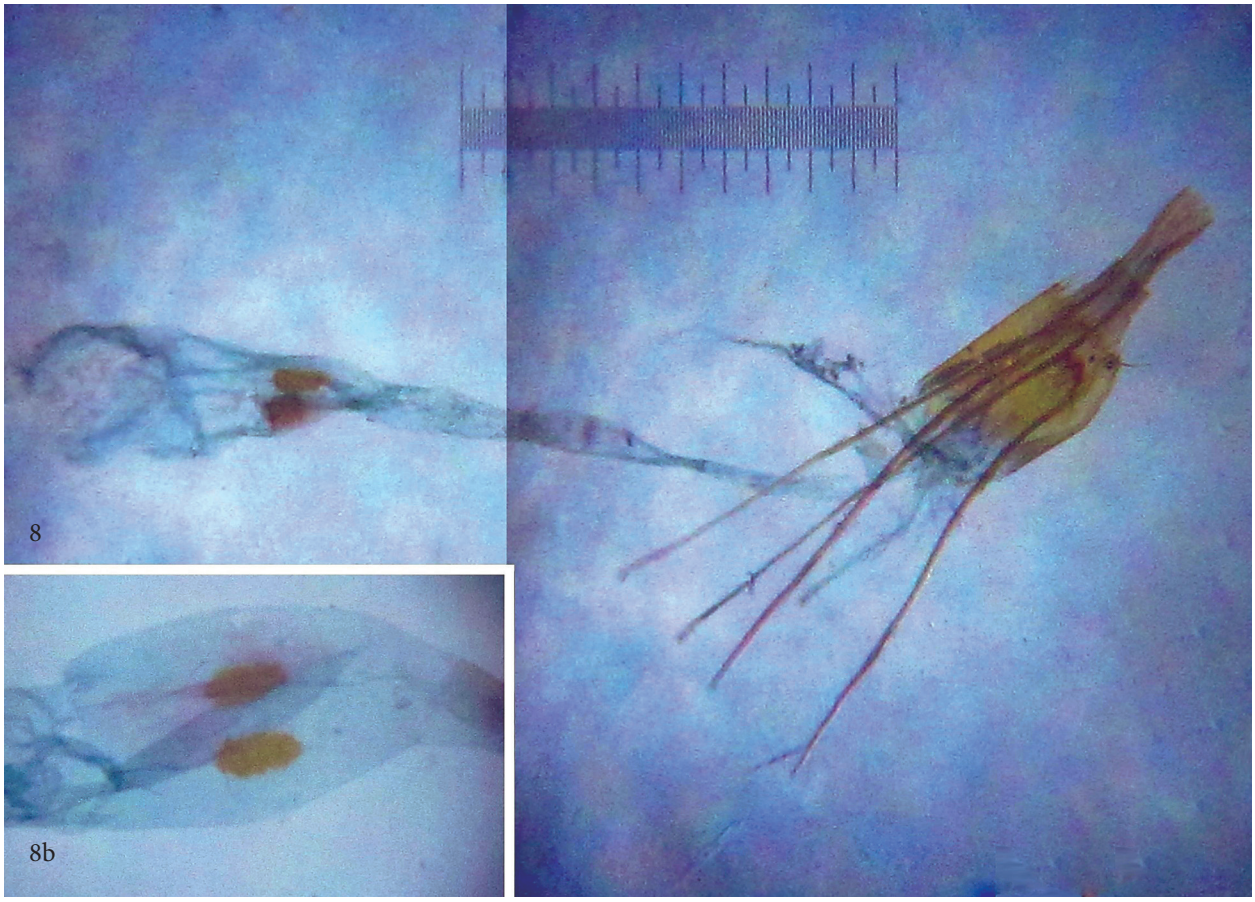

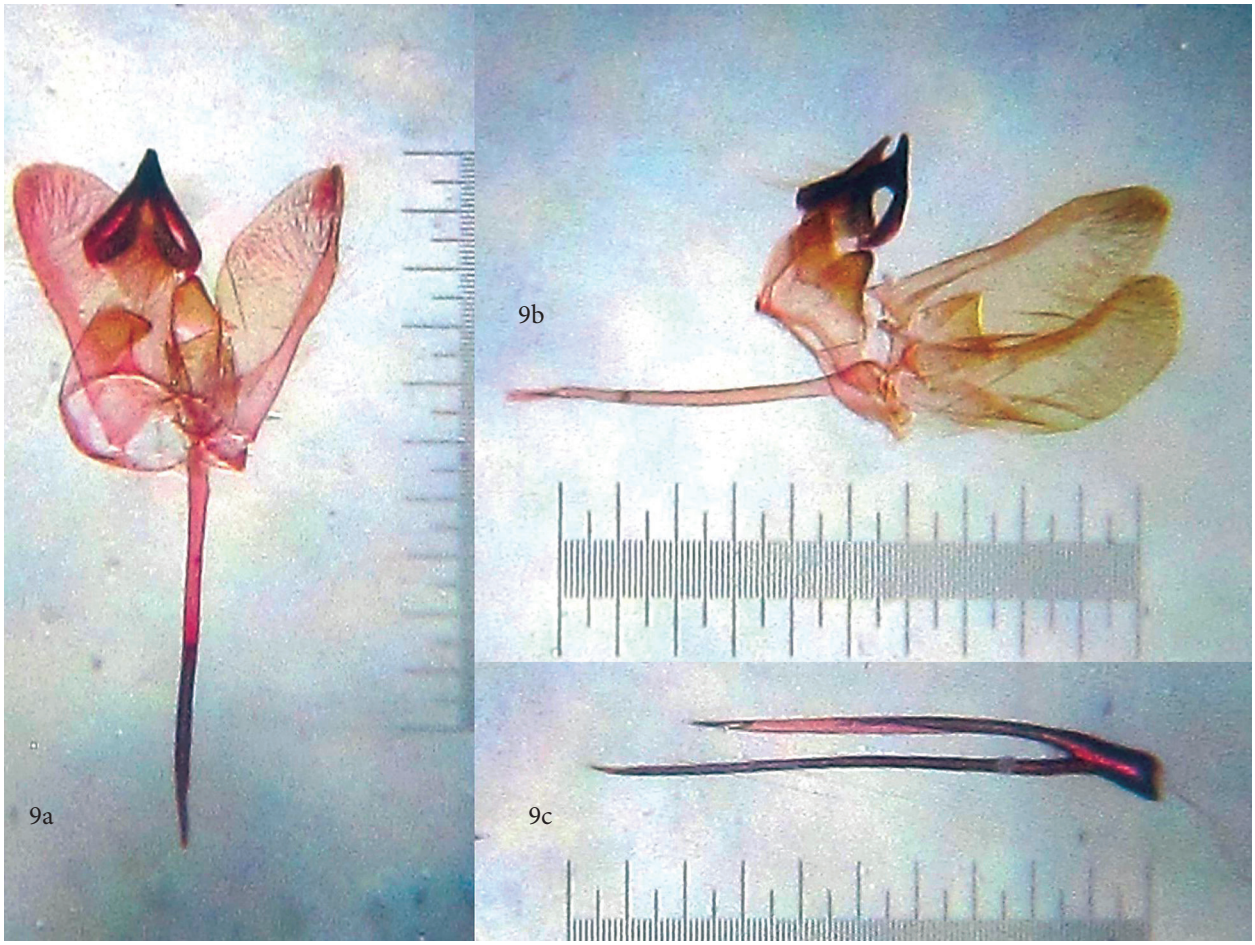

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