

A new *Eudarcia*-species from Terceira (Azores): *Eudarcia atlantica* n. sp. (Lepidoptera: Tineidae)

Hans Henderickx

Samenvatting. Een nieuwe *Eudarcia*-soort van Terceira (Azoren): *Eudarcia atlantica* n. sp. (Lepidoptera: Tineidae)

De auteur beschrijft *Eudarcia atlantica* n.sp. van de Azoren (Portugal).

Résumé. Une nouvelle espèce du genre *Eudarcia* de Terceira (Açores): *Eudarcia atlantica* n. sp. (Lepidoptera: Tineidae)

L'auteur décrit une nouvelle espèce du genre *Eudarcia* des Açores (Portugal): *Eudarcia atlantica* n. sp.

Zusammenfassung. Eine neue *Eudarcia*-Art von Terceira (Azoren): *Eudarcia atlantica* n. sp. (Lepidoptera: Tineidae)

Eine neue *Eudarcia*-Art aus dem Azoren (Portugal), *Eudarcia atlantica* n.sp., wird beschrieben.

Key words: *Eudarcia atlantica* - Azores - new species.

Henderickx, H.A.: Hemelrijkstraat 4, B-2400 Mol, Belgium.

Introduction

In July 1994 larvae of *Luffia* Tutt spec. (Psychidae) were collected on 4 islands of the Azores to investigate the faunistics of this genus on the archipelago. On the islands Terceira, São Miguel and Fajal a case-building Tineidae-species occurred together with *Luffia*. The collected material was bred further on during and after the expedition. The bred Tineidae-species from Terceira appeared to belong to an undescribed species of the genus *Eudarcia* Clemens to which the name *Eudarcia atlantica* is given.

Eudarcia atlantica n.sp.

Holotype: 1♀ (fig. 1) with larval case and pupal exuvie, labelled: *Eudarcia atlantica* Henderickx, T1, HOLOTYPE (red label); Açores, Terceira, Angra do Heroísmo, (0-20 m) (white label); larva 13/VII/1994, imago 21/VIII/1994 (white label); Henderickx, H.A., Belgium (white label); in collection of the author.

Paratypes:

1. 1♀, mounted in pertex for light microscopy, data on slide: H155; *Eudarcia atlantica* Henderickx, T2, PARATYPE; Açores, Terceira, Angra do Heroísmo, (0-20 m); larva 13/VII/1994, imago IX/1994; Henderickx, H.A., Belgium; in collection of the author.

2. 1♀ thorax; abdomen and wings mounted for light microscopy on slides H153, H154, H156, labelled: *Eudarcia atlantica* Henderickx, T3, PARATYPE (white label); Açores, Terceira, Angra do Heroísmo, (0-20 m) (white label); larva 13/VII/1994, imago 29/VIII/1994 (white label); Henderickx, H.A., Belgium (white label); in collection of the author.

3. 1♀, labelled: *Eudarcia atlantica* Henderickx, T4, PARATYPE (white label); Açores, Terceira, Angra do Heroísmo, (0-20 m); larva 13/VII/1994, imago 29/VIII/1994 (white label); Henderickx, H.A., Belgium (white label); in collection of the British Museum of Natural History, London.

4. 1♀, prepared for scanning-electron microscopy, data in register: *Eudarcia atlantica* Henderickx, T5, PARATYPE; Açores, Terceira, Angra do Heroísmo, (0-20 m); larva 13/VII/1994, imago 21/VIII/1994; in collection of the author.

5. 1♀, labelled: *Eudarcia atlantica* Henderickx, T6, PARATYPE (white label); Açores, Terceira, Angra do Heroísmo, (0-20m) (white label); larva 13/VIII/1994, imago 29/VIII/1994 (white label); Henderickx, H.A., Belgium (white label); in collection Passerin d'Entrèves, Università di Torino, Italy.

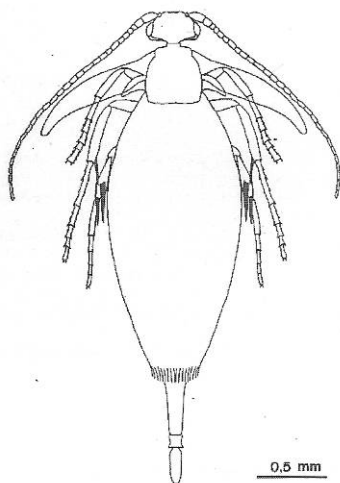
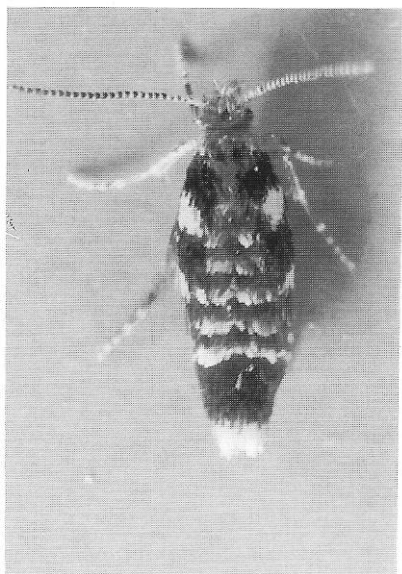


Fig. 1: *Eudarcia atlantica* n. sp., Paratype ♀, Azores, Terceira, Angra do Heroísmo, (0-20 m).

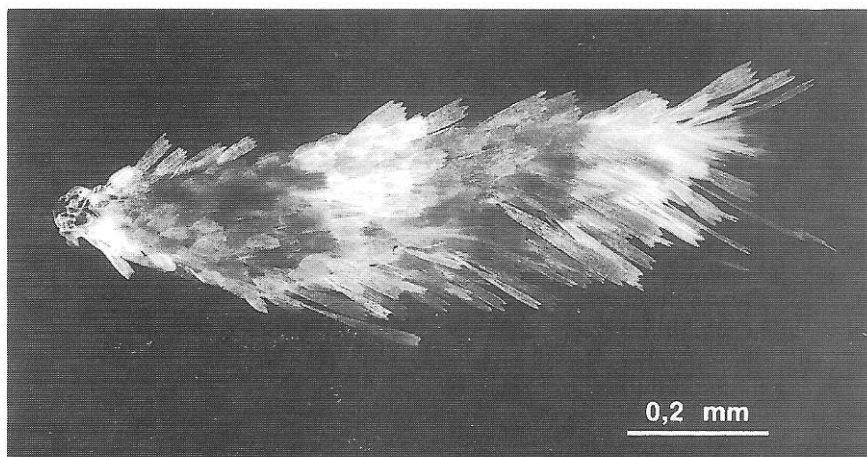


Fig. 2: *Eudarcia atlantica* n. sp., Paratype ♀, right forewing, Azores, Terceira, Angra do Heroísmo, (0-20 m).

Wings

Forewing (fig. 2) small, unsuitable for flying. Not longer than $\frac{2}{5}$ of total body length. Pattern very contrasted, a shiny white zone in the middle and a white apex on a blackish background with bronzy gloss. Hindwing reduced to a small flap.

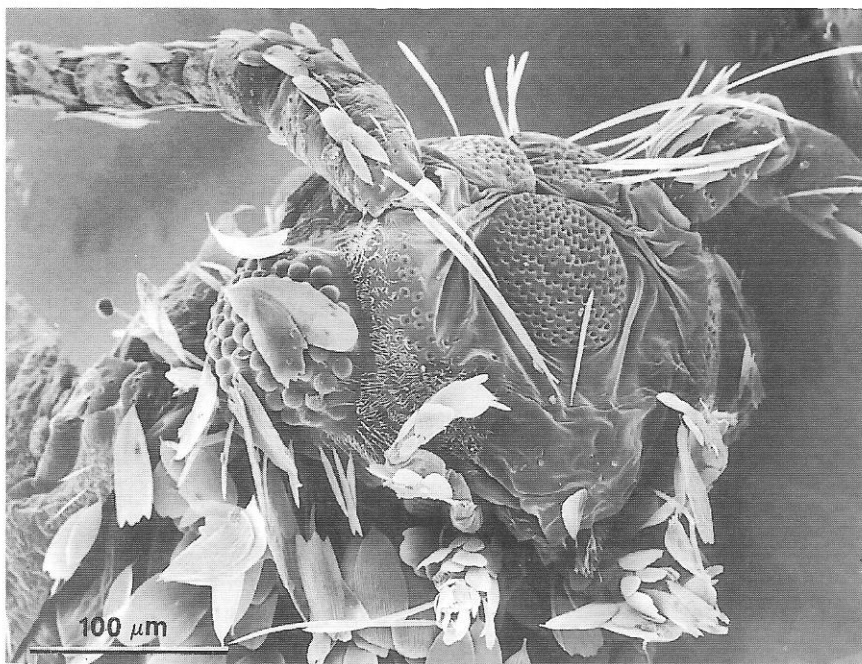


Fig. 3: *Eudarcia atlantica* n. sp., Paratype ♀, head, Azores, Terceira, Angra do Heroísmo, (0-20 m).

Head

Head densely rough-haired, ochreous. The scanning electron-micrograph (fig. 3) shows the structure of the head with the scales removed and the position of the palpi.

Antennae

Antennae about 7/10 of total body length. 28 segments with light ochreous rings.

Abdomen

Dark brown with light ochreous rings on each segment, anal tuft ochreous.

Genitalia

Female genitalia (fig. 4a-d) with two sclerotised bands in the VIIIth segment. The proximal ends are slightly connected to the anterior apophyses like in *E. brachyptera* (Passerin d'Entrèves, 1974). In slide H156 the distal base of the bands show long cilia. The distal ends of the anterior apophyses are free and not connected at the apex like those of *E. brachyptera*.

Concerning the general aspect there is a resemblance between *E. atlantica* n.sp. and the species of the *E. leopoldella* Costa-group (see Passerin d'Entrèves 1975), but also with *E. sardoa* Passerin d'Entrèves, 1977.

In *E. sardoa* the sclerotised bands are not connected to the anterior apophysis.

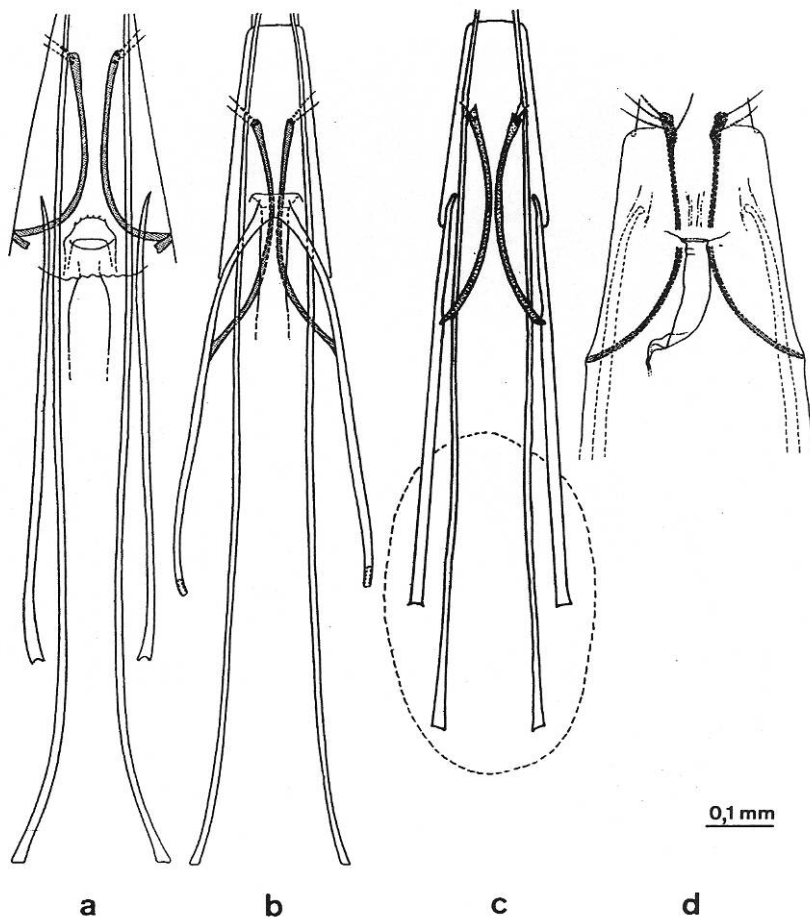


Fig. 4: *Eudarcia* spp. (female genitalia:

a. *Eudarcia leopoldella* (Costa, 1836) (after Passerin d'Entrèves 1975); b. *Eudarcia brachyptera* (Passerin d'Entrèves, 1974) (after Passerin d'Entrèves 1975); c. *Eudarcia atlantica* n. sp., Paratype ♀, Azores, Terceira, Angra do Heroísmo (0-20 m); d. *Eudarcia sardoa* (Passerin d'Entrèves, 1977) (after Passerin d'Entrèves 1977).

The bursa copulatrix (roughly marked in fig. 4), the antrum and the ductus bursae are weakly sclerotised and should be described in detail when more material is available. Male genitalia unknown.

Larva

Lives in a portable case that is covered with sand (fig. 5), abdominal legs short and useless for locomotion (fig. 6).

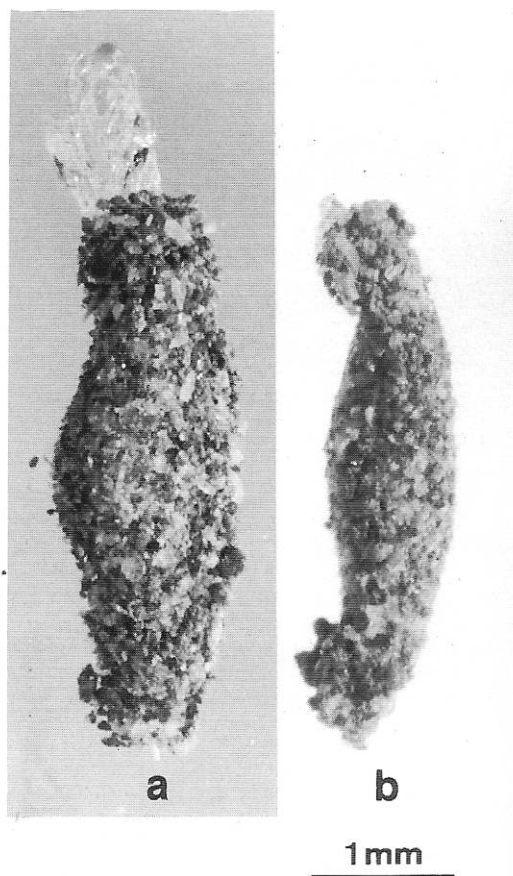


Fig. 5: *Eudarcia atlantica* n. sp., Paratype ♀, Azores, Terceira, Angra do Heroísmo, (0-20 m), larval case; a. dorsal view (with exuvia); b. lateral view.

Taxonomy

As far as one can conclude from the investigation of the very little available female material of both *E. sardoa* and *E. atlantica* n. sp. both species seem to belong to the same group, with resemblances to the group of *E. leopoldella* Costa, 1836.

Concerning the other *Eudarcia*-species with brachypterous wings, females of *E. atlantica* show important differences from *E. brachyptera* in genital structure, the relation wing/body size and wing pattern. *E. atlantica* n. sp. differs from *E. gallica* Petersen, 1962 in genital structure and in wing pattern (Sauter 1985).

Biology

Larvae and pupae were collected on Terceira in July, imagoes were obtained in August and September. Larval cases were often found on walls and rocks in the coastal

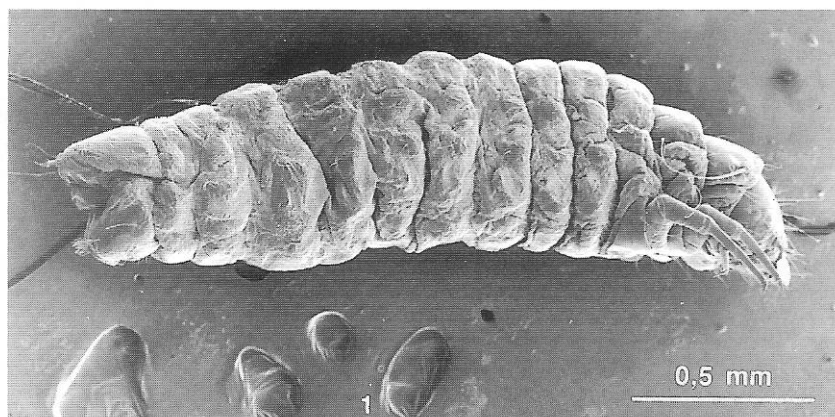


Fig. 6: *Eudarcia atlantica* n. sp., larva, Azores, Terceira, Angra do Heroísmo, (0-20 m).

area; they are more easily spotted on walls painted white. Freshly emerged imagos jump and run rapidly and their black and white contrasting appearance gives good camouflage on the black lava rocks that are often partially covered with whitish lichen. The survival success of a contrasting black-white pattern on a volcanic soil can also be noticed with *Hipparchia azorina* Strecker, 1899 on Terceira.

Since only females were found the possibility of parthenogenesis was considered. However, females that were kept alive for a few days did not immediately dispose their eggs and showed the "male-calling" behaviour with protruded ovopositor as do some Psychidae-species.

Distribution

From the collected *Eudarcia*-material only larvae from Terceira, Angra do Heroísmo hatched. Analogue larval cases were found on São Miguel (Faia de Baixo, 23/VII/1994, 5 cases, 26/VII/1994, 6 cases; Ribeira Grande, 21/VII/1994, 3 cases) and Fajal (Horta, 9/VII/1994, 2 cases and 11/VII/1994, 3 cases), but without adult material they can not be identified with certainty. On Terceira, *Eudarcia*-cases were also found in Praia da Vitoria (15/VIII/1994, 2 cases) and on the other side of the island, in Biscoitos (5/VII/1994, 5 cases) but not in the mountainous areas.

If *E. atlantica* n. sp. colonized the Archipelago via the major island of Madeira, which might have provided some stepping-stone opportunity for the dispersal of animals and plants during the Tertiary (Balletto et al. 1990) the genus should be sought on that island.

Etymology

As far as we know, the distribution of the species is limited to the Azores, in the centre of the Atlantic. Therefore I propose the name *Eudarcia atlantica*.

Acknowledgments

I would like to thank Willy De Prins, for helping me with literature research, Dr Pietro Passerin d'Entrèves, Dr Reinhard Gaedike and Peter Hättenschwiler for useful advice. I also thank Bruno van Deuren, Ronny Nuydens, Rik Vermeer and Jan Bosselaers

for their skillful assistance during the research of the material, Jan Keersmakers who accompanied me on the islands, Valentina Melo dos Santos and Mrs Suzana Do Canto Brum Noronha Pimentel for their hospitality and Diniz and Dr Louis Carlos Decq Motta for their caring support of the expedition.

References

- Balletto, E. et al., 1990. On some aspects of the Biogeography of northern Macaronesia., in: International Symposium on biogeographical Aspects of Insularity, Accademia Nazionale Dei Lincei, Roma.
- Passerin d'Entrèves, P., 1974. Nuove specie di Tineidi italiani (Lepidoptera, Tineidae). - *Boll.Mus.Zool. Univ.Torino* 1: 1-8.
- Passerin d'Entrèves, P., 1975. Il genere *Meessia* Hofmann (Lepidoptera, Tineidae, Meessiinae). - *Boll.Mus.Zool. Univ.Torino* 6: 129-150.
- Passerin d'Entrèves, P., 1977. Una nuova specie di *Meessia* (Lepidoptera, Tineidae, Meessiinae) della Sardegna. - *Boll.Soc.Sarda Scienze Naturali* XI, vol. XVII.
- Sauter, W., 1982. Über das Weibchen von *Meessia gallica* Petersen nebst einigen systematische Bemerkungen zu den Tineidae (Lepidoptera). - *Mitt.schweiz.ent.Ges.* 55: 125-138.
- Sauter, W., 1985. Das Weibchen von *Meessia gallica* Petersen, 1962 (Lep., Tineidae). - *Mitt.schweiz.ent.Ges.* 58: 189-191.
- Vieira, V. & Pintureau, B., 1993. Comparative diversity of Lepidoptera (Insecta) in the islands of the Azores: revision with new information. - *Arquipélago, Life and Marine Sciences* 11A: 107-112.
- Zaguljaev, A.K., 1979. Fauna SSSR. Tom IV Lepidoptera, 6 Nastojskie Moli (Tineidae) Meessiinae. Nauka, Leningrad, 408 p.