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(Tomo 6

ON EUPTERYX CAPREOLA LINDBERG AND E. FILICUM (NEWMAN) (HOMOPTERA: CICADELLIDAE, TYPHLOCYBINAE) FROM MADEIRA AND THE AZORES

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With 23 figures

ABSTRACT. The present study redescribes and illustrates two species of the genus *Eupteryx* Curtis which were recently collected in the archipelagos of Madeira and the Azores: *E. capreola* Lindberg and *E. filicum* (Newman). The female seventh abdominal sternite of both species is here presented for the first time.

RESUMO. O presente estudo compreende as redescrições de duas espécies do género *Eupteryx* Curtis que se colheram recentemente nos arquipélagos da Madeira e dos Açores: *E. capreola* Lindberg e *E. filicum* (Newman). Ambas as espécies são ilustradas incluindo o sétimo esternito abdominal das fêmeas que é aqui descrito pela primeira vez.

Eupteryx capreola Lindberg is compared with its closest relative *E. filicum* (Newman). The former species is quite interesting since it only occurs in the Macaronesian area (Madeira and the Canaries) (Lindberg, 1954a, 1961; Nast, 1972). It has not been found so far in the Azores or in the European mainland. *E. filicum*, besides its wide geographical distribution in Europe which includes Portugal (Lindberg, 1962; Nast, 1972; Le Quesne & Payne, 1981), occurs also in the Canaries (Lindberg, 1936, 1954a; Nast, 1972), in Madeira and Porto Santo (Lindberg, 1961), and in the Azores (Lindberg, 1954b; Quartau, 1980). Both species were found by one of the authors (J. A. Quartau) in Madeira and the Azores always on *Pteridium aquilinum*.

The following are redescriptions of *Eupteryx capreola* and *E. filicum* based on the new material collected recently in the archipelagos of Madeira and the Azores.

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Eupteryx capreola Lindberg, 1954 (figs. 1-13)

Eupteryx capreolus Lindberg, 1954

Overall length (measured from apex of crown to hind margin of elytra): ♂ 2.60 mm - 2.73 mm (mean 2.67 mm); ♀ 2.67 mm - 2.87 mm (mean 2.81 mm). Structurally very similar to *E. filicum* (Newman). General body colour pale yellow with a few dark brown markings (fig. 1). Crown yellowish, with a medial large roundish spot, sometimes divided into two small black spots around the coronal suture (figs. 2-5); anteclypeus and postclypeus partly dark as illustrated (fig. 6). Pronotum often with a dark median area as illustrated (figs. 2-5); scutellum yellowish with a dark

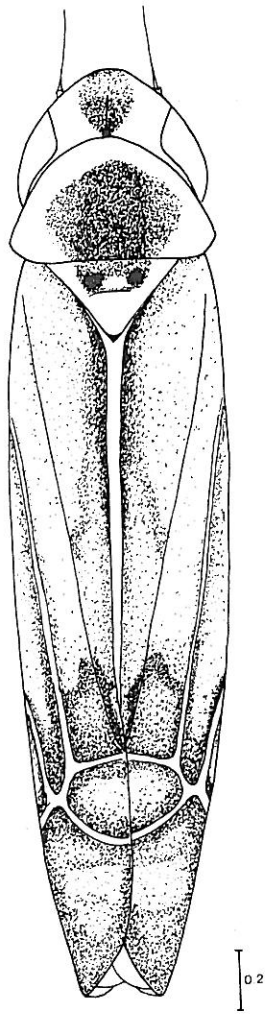
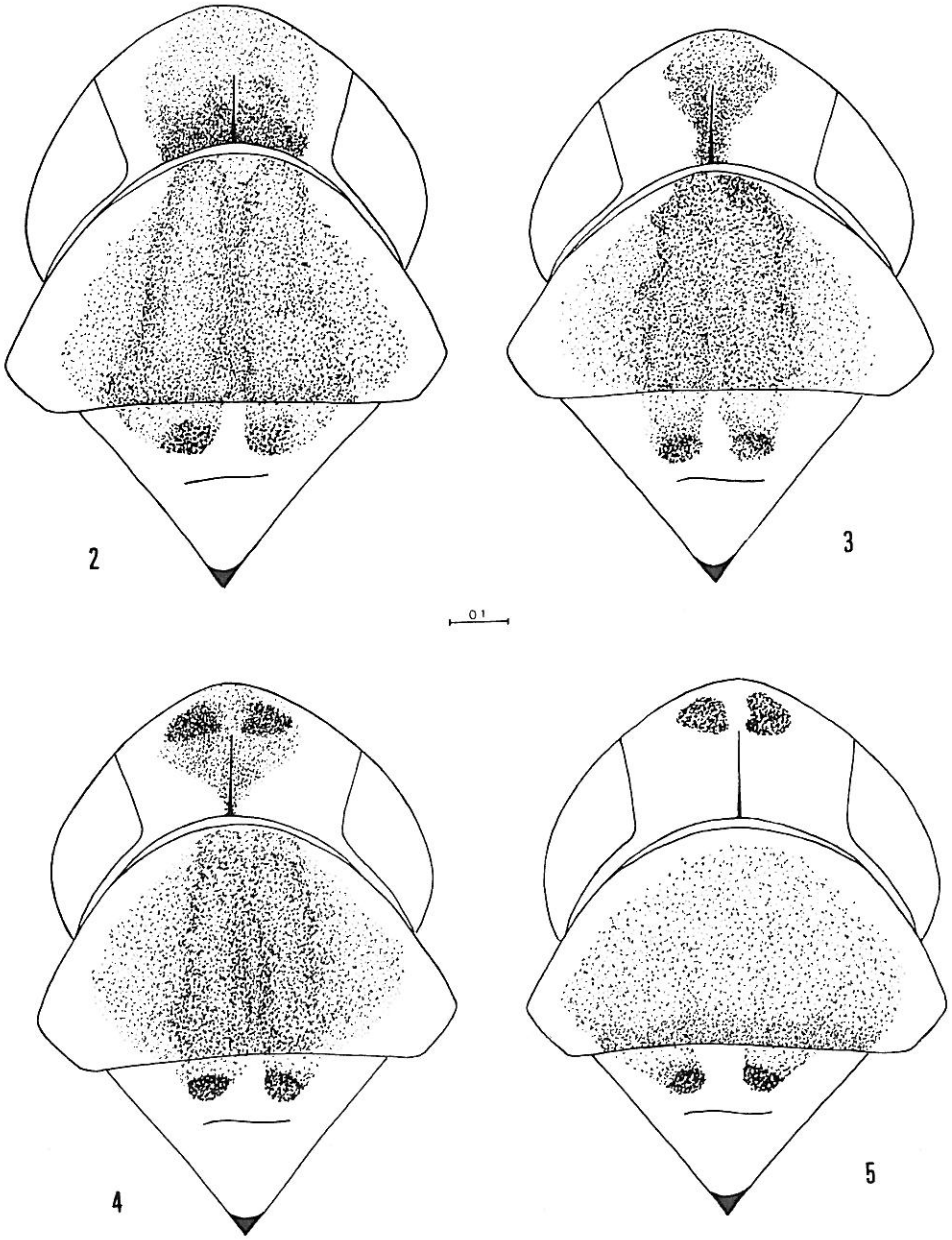


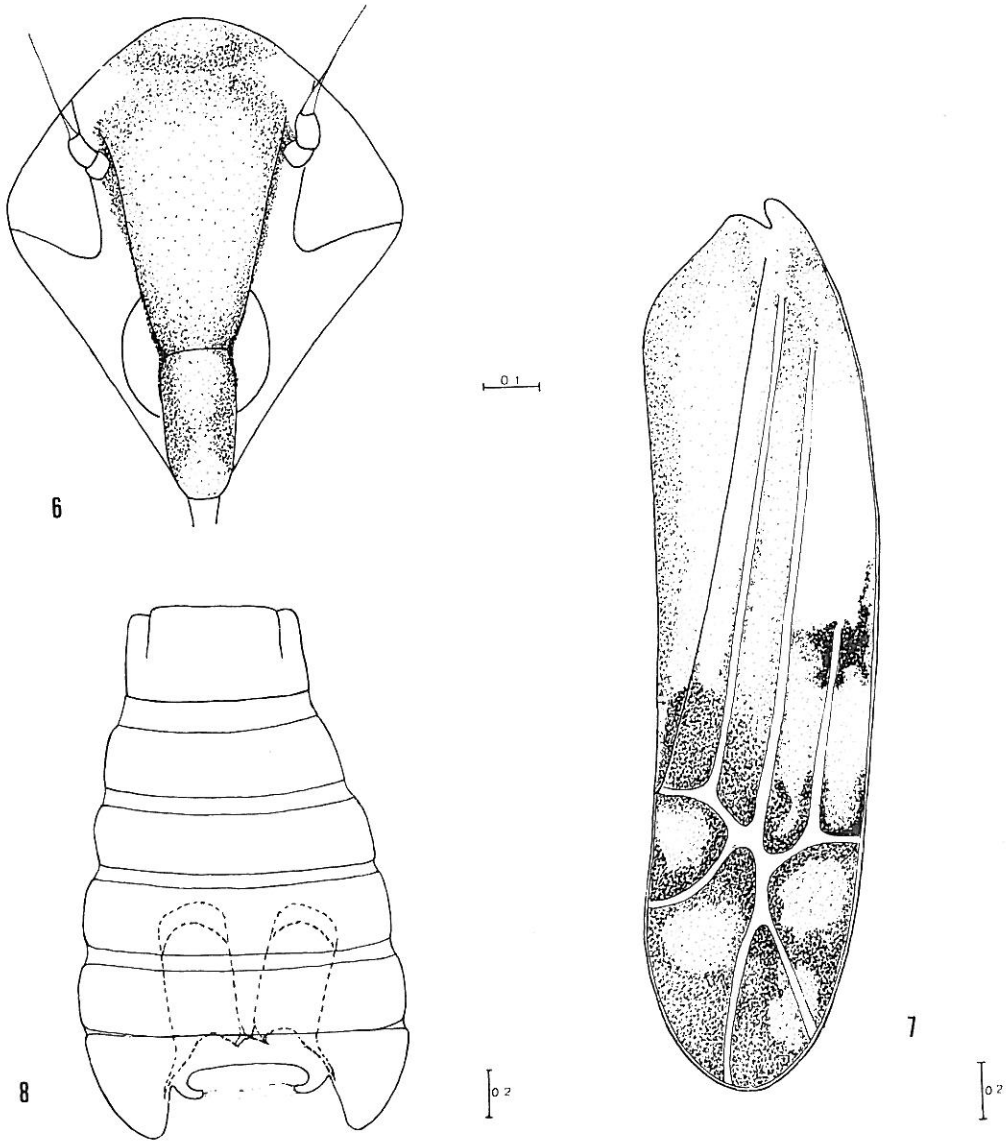
Fig. 1. — *Eupteryx capreola* Lindberg: Adult male, dorsal view (Madeira — Cova do Tambor) (scale in mm).

transverse suture, and with two small dark spots near the anterior margin; apex black as is typical in the genus (figs. 2-5). Apical cells of elytra as well as distal parts of Cubital, Median and Radial cells fuscous (fig. 7); veins of elytra yellowish; elytra with a large light and opaque spot, the



Figs. 2-5. — *Eupteryx capreola* Lindberg: 2-5, vertex, pronotum and scutellum, dorsal view (Madeira — Cova do Tambor; Ribeiro Frio) (scale in mm).

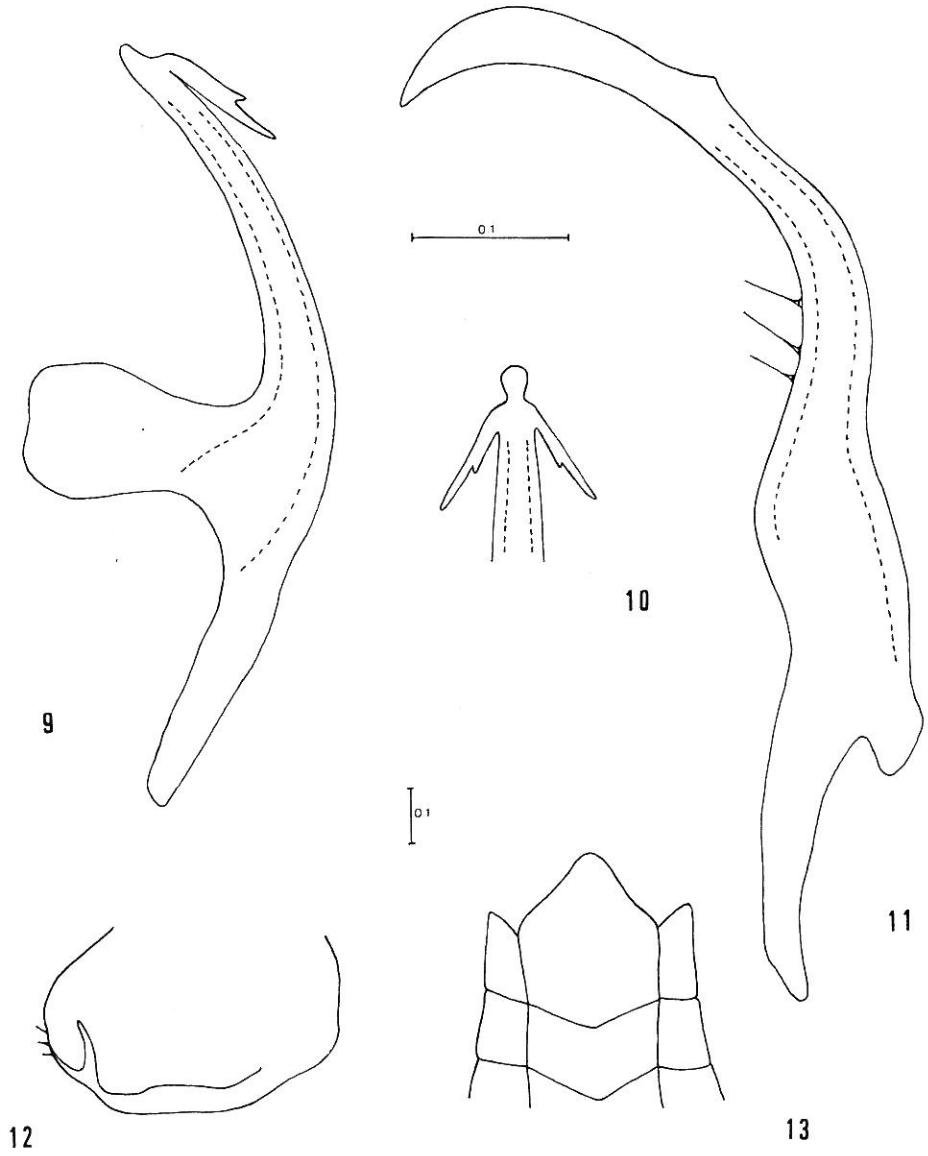
waxy area typical of the subfamily (fig. 7). Abdomen dark, with tergites yellowish near the hind and lateral margins; second abdominal apodemes broad and short reaching the 5th abdominal segment (fig. 8).



Figs. 6-8. — *Eupteryx capreola* Lindberg: 6, face, ventral view; 7, right forewing, left lateral view; 8, abdomen with apodemes of second sternite, ventral view (Madeira — Cova do Tambor; Queimadas) (scales in mm).

Male genitalia. Subgenital plates of pentagonal shape and with a long macroseta in each hind corner. Lobes of pygophore covered

externally with a group of about 5-7 macrosetae and with a strong dorsal apophysis slightly curved (fig. 12). Aedeagus with a pair of apical appendages, each with a tiny denticle as illustrated (figs. 9-10). Styles well developed, curved in apical part and with a small subapical tooth (fig. 11). Anal tube usually with 3-4 setae.



Figs. 9-13. — *Eupteryx capreola* Lindberg: 9, aedeagus, right lateral view; 10, apex of aedeagus, postero-dorsal view; 11, styles, lateral view; 12, apex of right pygophore lobe of male, left lateral view; 13, hind margin of female 7th abdominal sternite, ventral view (Madeira — Cova do Tambor; Ribeiro Frio) (scales in mm).

Female genitalia. Seventh abdominal sternite of female acutely angled in apical part as illustrated (fig. 13).

Distribution. Canary Islands and Madeira Archipelago (Lindberg, 1954a, 1961; Nast, 1972).

Host plants. Herbaceous plants (Lindberg, 1954a, 1961) and *Pteridium aquilinum* (material here studied).

Material studied. Madeira, Queimadas, on herbaceous plants, 1.5.80 (leg. Luís Mendes) 3 ♂, 4 ♀; idem, Ribeira das Queimadas - Santana, on *Pteridium aquilinum*, 1.5.80 (col. J. A. Quartau) 1 ♂, 5 ♀; idem, Fajã do Penedo, 1.10.81 (col. Artur Serrano) 2 ♂, 2 ♀; idem, Cova do Tambor, on *Pteridium aquilinum*, 3.5.80 (col. J. A. Quartau) 12 ♂, 17 ♀; idem, Ribeiro Frio, 3.5.80, 7 ♂, 12 ♀; idem, Caniçal, on herbaceous plants, 3.5.80, 1 ♂; idem, Eira de Fora (Camacha) 3.5.80, 6 ♂, 4 ♀; idem, Fajã da Nogueira, on *Pteridium aquilinum*, 4.5.80, 3 ♂, 26 ♀; idem, Porto Santo, Farrobo, on herbaceous plants, 5.5.80, 1 ♀; idem, Lugar de Baixo, grassland, 11.5.80, 1 ♂; idem, Rabaçal - Calheta, 12.5.80, 1 ♂, 6 ♀; idem, Calheta - Prazeres, 12.5.80, 2 ♀; idem, between September and October of 1981 (col. A. V. Harten) 24 ♂, 4 ♀; idem, alto do Rabaçal, 10.10.81 (col. Bivar Sousa) 14 ♂, 11 ♀.

Observations. This species was first recorded for Madeira and the Canaries respectively by Lindberg (1954a) and (1961). *E. capreola* has never been collected in Europe or elsewhere in the mainland. If it really proves to be an independent species (see Discussion), it is an endemism for Macaronesia, *i.e.*, it is a species confined to the archipelagos of Madeira and the Canaries only.

Eupteryx filicum (Newman, 1853) (figs. 14-23)

Typhlocyba filicum Newman, 1853
Eupteryx laureti Lindberg, 1936

Overall length: ♂ 2.60 mm - 2.73 mm (mean 2.67 mm); ♀ 2.80 mm - 3.00 mm (mean 2.93 mm). General body colour pale yellow with a few indistinct brownish markings (fig. 14). Crown yellowish, usually unmarked, occasionally with two diffuse and small brownish spots around the coronal suture (fig. 15) (these markings are absent in the male collected in Odemira, Portugal); anteclypeus and postclypeus more or less entirely pale, except the margins of the latter which are slightly brownish coloured (fig. 16). Pronotum yellowish as illustrated (fig. 15); scutellum yellowish with a transverse suture; apex black (fig. 15). Major part of apical part of the elytra strongly fuscous, and comparatively much less dark than in *E. capreola*; veins of elytra yellowish (fig. 17). Abdomen black with ter-

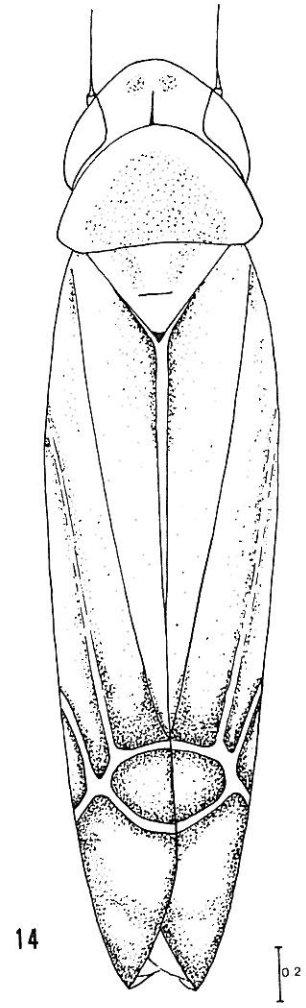
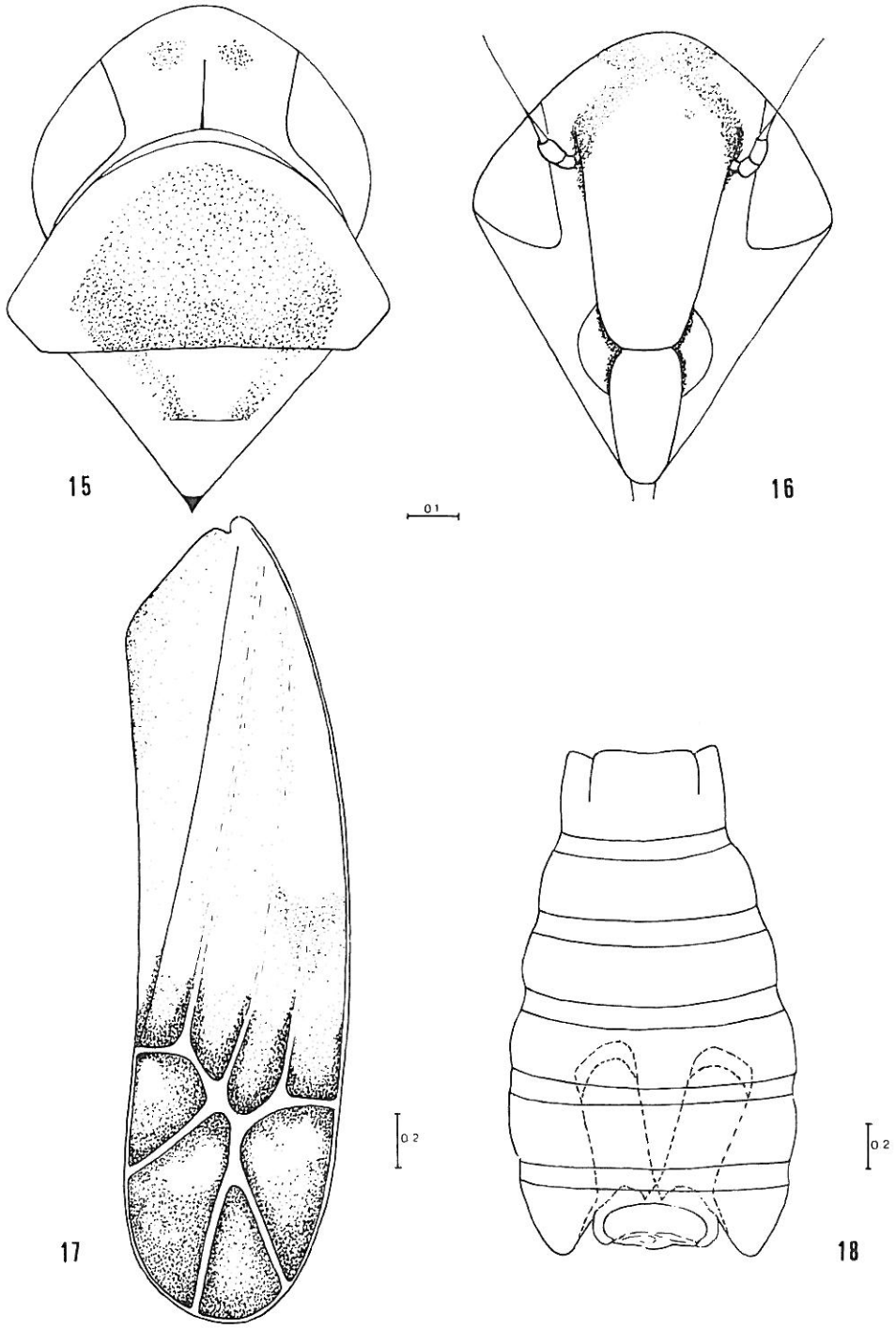


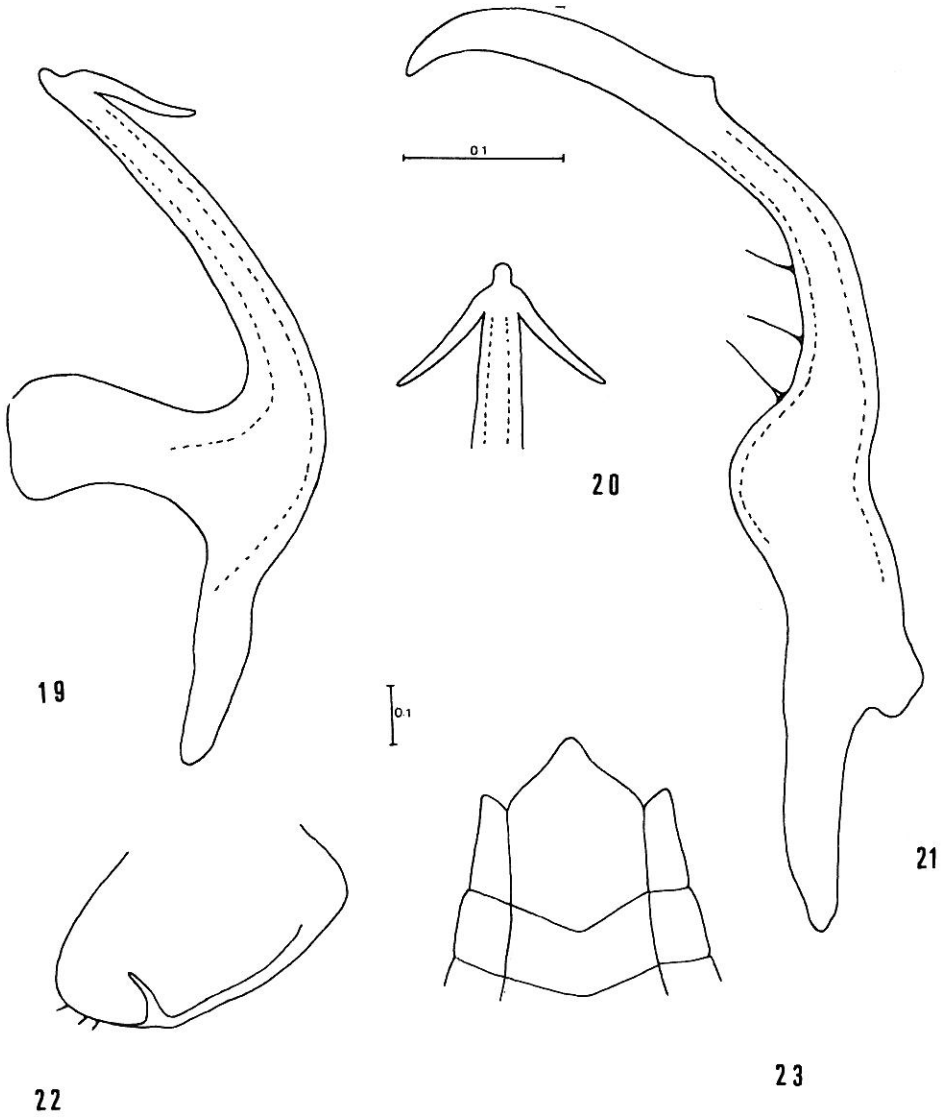
Fig. 14. — *Eupteryx filicum* (Newman): Adult male, dorsal view (Azores — Caldeiras da Ribeira Grande) (scale in mm).

gites yellowish near the hind and lateral margins; second abdominal apodemes broad and short reaching the 5th abdominal segment as in *capreola* (fig. 18).

Male genitalia. Subgenital plates of pentagonal shape and with a long macroseta in each hind corner. Lobes of pygophore rounded with a dorsal apophysis slightly curved and externally with 5-7 macrosetae (fig. 22). Aedeagus with a pair of apical appendages as in the French material illustrated by Ribaut (1936) or as in the British material described by Le Quesne & Payne (1981) (figs. 19-20). Styles as in *capreola* (fig. 21). Anal tube usually with 3-4 setae.



Figs. 15-18. — *Eupteryx filicum* (Newman): 15, vertex, pronotum and scutellum, dorsal view; 16, face, ventral view; 17, right forewing, left lateral view; 18, abdomen with apodemes of second sternite, ventral view (Azores — Caldeiras da Ribeira Grande) (scales in mm).



Figs. 19-23. — *Eupteryx filicum* (Newman): 19, aedeagus, right lateral view; 20, apex of aedeagus, postero-dorsal view; 21, styles, lateral view; 22, apex of right pygophore lobe of male, left lateral view; 23, hind margin of female 7th abdominal sternite, ventral view (Azores — Caldeiras da Ribeira Grande) (scales in mm).

Female genitalia. Seventh abdominal sternite of female acutely angled in apical part as in *E. capreola* (fig. 23).

Distribution. Bulgaria (Dworakowska, 1972); Azores, Belgium, Canary Islands, Czechoslovakia (Moravia), France, Great Britain (England), Greece, Italy (also Sadinia and Giglio I.), Madeira Archipelago,

Netherlands, Poland, Portugal, Switzerland, U. S. S. R. (Turkestan) (Lindberg, 1936, 1954a, b; Nast, 1972).

Host plants. *Aspidium* sp., *Aspidium aculeatum, Citrus* sp., *Pteridium aquilinum, Polypodium vulgare* (Ribaut, 1936; Lindberg, 1954a, b, 1961; Le Quesne & Payne, 1981) and *Pteridium aquilinum* (material here studied).

Material studied. Portugal, Serra da Estrela, 11.6.72 (col. J. A. Quartau) 1 ♀; idem, Santo Tirso, Singeverga (col. T. Monteiro) 1 ♂, 1 ♀; idem, Gerês, S. Bento da Porta Aberta, 12.10.80, 1 ♂, 9 ♀; idem, Odemira, Volta do Carvalhal, on herbaceous plants, 26.8.85 (col. A. I. Fançony) 1 ♂; idem, Carvoeiro (Algarve) 14.7.79 (col. J. A. Quartau) 4 ♂, 3 ♀. Azores, Caldeiras da Ribeira Grande, on *Pteridium aquilinum*, 5.9.79 (col. J. A. Quartau) 33 ♂, 29 ♀; idem, Lagoa Azul, 9.10.79, 1 ♂.

Observations. This species was first recorded for Portugal by Lindberg (1962) in the area of Sintra and has been collected also in the mainland during recent field-work. The species was collected in Madeira and Porto Santo by Lindberg (1961) as well as in the Azores by Lindberg (1954b) and Quartau (1980).

DISCUSSION

As treated by Lindberg (1954a), *E. capreola* is very closely related to *E. filicum*. Furthermore, according to the aforementioned author (*op. cit.*) *E. capreola* is an endemic species in Macaronesia, i.e. it only occurs in Madeira and the Canaries. The presence of a distinct fine denticle on each of the two lateral appendages of the aedeagus in *capreola* has been referred to as the main difference between the two species. In the new material studied and presented in this paper there are also some differences in the general colouration, *capreola* being darker than *filicum* (see description).

However, close examination of the recent material here treated has shown the following: (a) in the 34 males from the Azores, which apparently belong to *filicum* since *capreola* is considered not to occur in that archipelago, one specimen has a small denticle as in *capreola*; and (b) in our material from Madeira, which, judging by the general colouration appears to belong to *capreola* and not to *filicum*, there are a few specimens in which denticles are practically absent.

The above mentioned fact could suggest that *capreola* merely is an extreme form of *filicum* and that the denticle on the aedeagus is no more than a variable structure of one and the same species, namely *E. filicum*, and thus does not represent a character that justifies the specific separation of the two variants. In fact, to clarify the relationships of the species

and in order to establish whether they occupy different niches and are reproductively isolated or not ecological and biological work needs to be done, for instance in Madeira, where both species are supposed to occur.

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