

New records of Aphids (*Homoptera: Aphidoidea*) from Madeira Island

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Twelve aphid species not previously recorded are added to the entomofauna of Madeira Island, with 5 new to Macaronesia. This raises the number of known species from Madeira proper to 140. They were collected on various ecosystems, including agricultural lands, exotic forest, native forest (laurisilva) and high altitude pastures.

These new records include: *Thecabius affinis* (Kaltenbach) (Pemphigidae); *Anoecia corni* (Fabricius), *Drepanosiphum platanoidis* (Schrank), *Monelliopsis pecanis* Bissell, *Takecallis arundinariae* (Essig) (Drepanosiphidae); *Aphis epilobii* Kaltenbach, *Eucarazzia elegans* (Ferrari), *Myzus hemerocallis* Takahashi, *Rhopalosiphoninus latysiphon* (Davidson), *Rhopalosiphoninus tulipaellus* (Theobald) (Aphididae); *Maculolachnus submacula* (Walker), *Neotrama maritima* Eastop (Lachnidae).

General faunistic considerations are presented for each one of the species treated, including their geographical distribution.

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Palabras clave: Aphidoidea, Madeira, Macaronesia.

INTRODUCTION

The superfamily Aphidoidea in the archipelago of Madeira (Madeira, Porto Santo and Desertas Islands) is one of the better known insect groups. On a previous work AGUIAR *et al.* (1995) presented an updated list for the whole archipelago with a total of 131 species, of which 97% are from Madeira proper. The present work adds 12 new records, all from the main island Madeira, raising its total to 139 and 143 for the archipelago.

Some of the new aphids were collected on Moericke water traps and the majority on plants of various ecosystems: low and medium altitude agriculture and wastelands, exotic forest, native Macaronesian

forest (Laurisilva) and high altitude pastures.

All the studied samples preserved on ethanol and on slide mounts are on the insect collections of the Laboratório Agrícola da Madeira (ICLAM), referenced by code numbers beginning by letter «A» (e.g. A12) and Estação Agronómica Nacional (CAEAN), registered only by numbers (e.g. CAEAN 4800).

LIST OF NEW RECORDS

On the present work, the classification followed is that proposed by ILHARCO (1992) and within each family the species are listed alphabetically.

Pemphigidae

Thecabius Koch, 1857

Thecabius affinis (Kaltenbach, 1843)

The Spring generations of these aphids form galls by folding the leaves of *Populus* spp., which are their primary hosts. The alataform progeny is separated from the fundatrix, both inhabiting separated galls. The alatae are medium to large sized insects, which leave the galls in late June-July to form waxy colonies on *Ranunculus*. The genus *Thecabius* is according to BLACKMAN & EASTOP (1994), closely related to *Pemphigus*, a genus with 2 recorded species from Madeira, both of which form galls on *Populus* spp. Our sample was collected on *Ranunculus cortusifolius*, a Macaronesian endemism.

T. affinis occurs on a wide range of poplars throughout Europe, Asia including Japan and Korea (BLACKMAN & EASTOP, 1994). In Macaronesia it is known from the Islands of São Miguel and Terceira - Azores (NIETO-NAFRIA *et al.*, 1977).

Material studied: Ribeiro Frio, 840m (16-November-1994, CAEAN 5454b, *Ranunculus cortusifolius*, Col. F. Ilharco, F. Aguiar, J. Pinto, M. Pita & C. Brazão).

Drepanosiphidae

Anoecia Koch, 1857

Anoecia corni (Fabricius, 1775)

Of the 20 known species of this genus *A. corni* is probably the most widely distributed species. In Madeira it is most probably anholocyclic, living on the roots of various grasses (Gramineae and Cyperaceae). Their primary host on Europe is *Cornus sanguinea*, a plant that does not exist in Madeira (BLACKMAN & EASTOP, 1989; 1994).

This is a migrating species and one of the barley yellow dwarf virus (BYDV) vectors affecting barley and wheat (CONTI & CASETA, 1983).

The distribution area of *A. corni* goes from Europe, Russia to eastern Asia and North America. It was previously recorded for Macaronesia by Ilharco (1980), from the Island of São Miguel - Azores.

Material studied: Paul da Serra west of Bica da Cana, 1500m (30-March-1995, A554/JHM6573, roots of Gramineae, Col. & Det. J. H. Martin).

Monelliopsis Richards, 1960

Monelliopsis pecanis Bissell, 1983

According to Blackman & Eastop (1994), the Yellow Pecan Aphid is one of five North American species all closely associated with Juglandaceae: *M. pecanis* on *Carya* and the other four mainly on *Juglans*. *M. pecanis* together with *Monellia caryella* (Fitch) and *Melanocallis caryaefoliae* (Davis) constitute the Pecan aphid complex, which is the predominant insect problem in the North American pecan growing areas.

M. pecanis is recorded from North America and Mexico. More recently it was introduced in Egypt and South Africa where according to Berg (1995), it is an important pest of pecan trees in the eastern parts of the country. *M. pecanis* is a new record also for the Macaronesia.

Material studied: Preces, Câmara de Lobos, 200m (5-September-1995, A559, *Carya pecan*, Col. F. Aguiar; 18-July-1996, A577/CAEAN 5718, Col. F. Aguiar).

Takecallis Matsumura, 1917

Takecallis arundinariae (Essig, 1917)

T. arundinariae lives on the undersides of mature leaves of bamboos. In Madeira

this aphid can be found on *Pseudosasa japonica*, a shrubby bamboo that PRESS & SHORT (1994) states as the only one «to have naturalised in the archipelago, it is grown as an ornamental in Funchal and is found as an escape on roadsides above the town».

T. arundinariae is a new record for Macaronesia. It occurs closely related with these hosts in India, China, Taiwan, Korea and Japan. It was introduced in England, New Zealand and North America, where it has an anholocyclic life cycle (BLACKMAN & EASTOP, 1989; 1994).

Material studied: Santo da Serra, 674m (16-November-1994, CAEAN 5458b, *Pseudosasa japonica*, Col. F. Ilharco, F. Aguiar, J. Pinto, M. Pita & C. Brazão); Queimadas, 880m (25-September-1996, A588, *Pseudosasa japonica*, Col. F. Aguiar); Lombo da Boa Vista, Funchal, 175m (22-September-1996, A589, *Pseudosasa japonica*, Col. F. Aguiar).

Drepanosiphum Koch, 1855

Drepanosiphum platanoidis (Schrank, 1801)

The Sycamore aphid as all the eight species of *Drepanosiphum*, are associated with species of *Acer*, mainly *A. pseudoplatanus* wherever they are grown: Europe, Central Asia, North Africa, Australia, New Zealand, USA and Canada (BLACKMAN & EASTOP, 1989; 1994).

From Macaronesia *D. platanoidis* was already recorded for the Azorean islands of São Miguel, Terceira and Faial (NIETO-NAFRIA *et al.*, 1977).

Material studied: Ribeiro Frio, 840m (16-November-1994, CAEAN 5455, *Acer pseudoplatanus*, Col. F. Ilharco, F. Aguiar, J. Pinto, M. Pita & C. Brazão); Ribeiro Frio, 840m (31-October-1995, CAEAN 5625, *Acer pseudoplatanus*, Col. F. Aguiar).

Aphididae

Aphis Linnaeus, 1758

Aphis epilobii Kaltenbach, 1843

A. epilobii can be found living up stems, under leaves and in inflorescences of several species of *Epilobium* (STROYAN, 1984).

This is a new record for Macaronesia, but very common and widely distributed throughout Europe including Continental Portugal. It is also known from the Canadian Arctic.

Material studied: Encumeada, 1100m (15-November-1994, CAEAN 5442, *Epilobium tetragonum*, Col. F. Ilharco, F. Aguiar, J. Pinto, M. Pita & C. Brazão).

Eucarazzia del Guercio, 1921

Eucarazzia elegans (Ferrari, 1872)

This rather small green aphid, lives on the undersides of leaves, shoots and flowers of several Labiatae (*Mentha*, *Salvia*, *Lavandula*, etc.). In Madeira its host plant could not be identified because the few specimens recorded were caught on a yellow water trap.

The alatae of *E. elegans* are easily identifiable by observing the siphunculi, which have a dark swollen extremity and a pale cylindrical base, and their wings have dark triangular spots at the ends of all the veins.

From Macaronesia it was already recorded from Tenerife Island (Canary Islands) (NIETO-NAFRIA *et al.*, 1977) and from the Azores (STOETZEL, 1985). Also known from the Mediterranean, Africa (Kenya, Burundi, Zimbabwe and South Africa) (BLACKMAN & EASTOP, 1989) and introduced in California, U.S.A. (STOETZEL, 1985). Other regions include South America (Argentina and Bolivia) and India.

Material studied: Arieiro, Funchal, 150m (21-January-1994, A528, Moericke water trap).

Myzus Passerini, 1860**Myzus hemerocallis** Takahashi, 1921

M. hemerocallis feeds on Liliaceae, mainly *Hemerocallis* spp. and *Agapanthus umbellatus*. In Madeira the only host plant recorded is an endemic Liliaceae – *Scilla madeirensis* – which is a new host plant for this aphid.

BLACKMAN & EASTOP (1989), include in his area of distribution, Taiwan, China, Japan, India and South Africa. It is also recorded from Brazil, Panama and Mexico in the Neotropical region. In Europe it is only recorded from Paris, France where it was found in 1992 (Remaudierre & Munós-Viveros, 1992). *M. hemerocallis* is another new record for Macaronesia.

Material studied: Ribeira Brava under the bridge, 5m (15-November-1994, CAEAN 5441, *Scilla madeirensis*, Col. F. Ilharco, F. Aguiar, J. Pinto, M. Pita & C. Brazão).

Rhopalosiphoninus Baker, 1920**Rhopalosiphoninus latysiphon**

(Davidson, 1912)

This polyphagous and subterranean species, the Bulb & Potato aphid may be a serious pest problem of potato crop. It feeds on roots and subterranean stolons of tubers on soil and also on the sprouts of stored tubers (CARDEN *et al.*, 1983). The considerable losses suffered by the crop are mainly due to the efficacy of *R. latysiphon* as a vector of several persistent and non-persistent viruses, including Potato viruses A, Yn (Potato vein necrosis), Yc (AB) and PW (Potato virus V) (BELL, 1982; 1988). *R. latysiphon* feeds on the roots of many other plants and also on bulbs (*Tulipa*, *Gladiolus*). According to BLACKMAN & EASTOP (1989), *R. latysiphon* is an anholocyclic species and that sexual morphs are not known. These authors also refers to it as a vector of cucumber mosaic and beet yellows viruses.

The distribution of *R. latysiphon* includes Europe, Egypt, Rwanda, Kenya, South Afri-

ca, India, Nepal, Sri Lanka, Australia, New Zealand, Hawaii, and North and South America (BLACKMAN & EASTOP, 1989). From Macaronesia it was previously recorded from São Miguel Island in the Azores archipelago (ILHARCO, 1980).

Material studied: Arieiro, Funchal, 150m (27-December-1993, A524; January-1994, A592; March-1994, A593, 21-January-1994, A528; all Moericke water trap); Fajã da Nogueira, 600m (7-February-1994, A305, *Myrica faya*, Col. F. Aguiar).

Rhopalosiphoninus tulipaellus

(Theobald, 1916)

This is another polyphagous species that has a preference for subterranean organs (roots, bulbs, tubers etc.), on soil or on storage. Blackman & Eastop considers it a subspecies of *R. staphyleae* (Koch) and a pest of stored mangold beets (*Beta vulgaris*) in Europe and also recorded from a wide range of other plant genera.

As the previous species, *R. tulipaellus* is able to transmit several viruses including potato leaf roll, potato virus Y, beet mosaic, cabbage black ring spot, beet yellows, etc. (BLACKMAN & EASTOP, 1989).

R. tulipaellus seems to be mainly restricted to western Europe. In Macaronesia it was already recorded from Canary Islands. In Madeira as in Europe, *R. tulipaellus* is most probably entirely anholocyclic on roots of many host plants.

Material studied: Arieiro, Funchal, 150m (21-January-1994, A526, Moericke water trap).

Lachnidae**Maculolachnus** Gaumont, 1920**Maculolachnus submacula**

(Walker, 1848)

The Rose Root Aphid feeds on stems near the ground or on roots of wild and cultiva-

ted *Rosa* spp., always attended by ants. It is a medium to large size aphid, monoecious holocyclic, with apterous males (BLACKMAN & EASTOP, 1989).

M. submacula is known from Europe and India and it is a new record for Macaronesia and also for Continental Portugal.

Material studied: Tranqual, Campanário, 350m (19-July-1995, A556, *Lycopersicum esculentum*, Col. F. Aguiar). This specimen was not feeding on the sampled plant. In Continental Portugal: Bragança, Ribeira (14-June-1978, CAEN 2594, *Rosa* sp. [wild], Col. F. A. Ilharco & J. Pinto); Mortágua (1-March-1978, CAEN 4657, *Rosa* sp. [cultivated], Col. Olga Ferreira).

Neotrama Baker, 1920

Neotrama maritima Eastop, 1953

This Palaearctic subterranean species feeds on the roots of Compositae. The distribution of *N. maritima* was restricted to some coastal areas of Europe. For Macaronesia *N. maritima* is already known from the Island of São Miguel - Azores (ILHARCO, 1982).

Material studied: Fajã da Nogueira, 600m (7-February-1994, A306, *Myrica faya*, Col. F. Aguiar). The specimen was not feeding on the sampled plant.

RESUMEN

FRANQUINHO AGUIAR, A. M. y ALBANO ILHARCO, FERNANDO, 1997: New records of Aphids (Homoptera: Aphidoidea) from Madeira Island. *Bol. San. Veg. Plagas*, 23(4): 565-570.

Se citan como nuevas para la entomofauna de la Isla de Madeira, doce especies de pulgones de los cuales 5 también lo son para la Macaronesia. La presente aportación lleva el número de especies conocidas de Madeira a un total de 140. El material estudiado proviene de variados ecosistemas en los cuales se incluyen: agrícolas, forestales (indígenas & exóticos), y pastos de altitud.

Las nuevas citas incluyen: *Thecabius affinis* (Kaltenbach) (Pemphigidae); *Anoecia corni* (Fabricius), *Drepanosiphum platanoidis* (Schrank), *Monelliopsis pecanis* Bissell, *Takecallis arundinariae* (Essig) (Drepanosiphidae); *Aphis epilobii* Kaltenbach *Eucarazzia elegans* (Ferrari), *Myzus hemerocallis* Takahashi, *Rhopalosiphoninus latysiphon* (Davidson), *Rhopalosiphoninus tulipaellus* (Theobald) (Aphididae); *Maculolachnus submacula* (Walker), *Neotrama maritima* Eastop (Lachnidae).

Se presentan consideraciones faunísticas generales para cada especie, incluyendo su distribución geográfica.

Palabras clave: Aphidoidea, Madeira, Macaronesia.

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