

ON THE APHID FAUNA (HOMOPTERA, APHIDOIDEA) OF THE SALVAGE ISLANDS, WITH NEW RECORDS TO SELVAGEM GRANDE

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ABSTRACT

In order to know the aphid fauna of the Salvage Islands, a field survey was carried out in 2004 at Selvagem Grande, in collaboration with the Natural Park of Madeira. Eight aphid samples were collected from various hosts. The analysis of these samples led to the identification of four species, belonging to the Aphididae family —*Macrosiphum euphorbiae* (Thomas, 1878), *Myzus persicae* (Sulzer, 1776), *Rhopalosiphum padi* (Linnaeus, 1758) and *Uroleucon sonchi* (Linnaeus, 1767)— which are new records for the island. General considerations about each species are presented, as well as their distribution in the Archipelago of Madeira, Macaronesia, and the world.

Key words: Aphidoidea, Aphididae, Salvage Islands, Selvagem Grande, *Macrosiphum euphorbiae*, *Myzus persicae*, *Rhopalosiphum padi*, *Uroleucon sonchi*.

RESUMEN

Con el objetivo de conocer la afidofauna de las islas Salvajes se realizó, en 2004, un trabajo de campo en la isla de Selvagem Grande, en colaboración con el Parque Natural de Madeira, que permitió la colecta de ocho muestras de áfidos en diversos hospedadores. Como resultado del análisis de esas muestras se identificaron cuatro especies, pertenecientes a la familia Aphididae: *Macrosiphum euphorbiae* (Thomas, 1878), *Myzus persicae* (Sulzer, 1776), *Rhopalosiphum padi* (Linnaeus, 1758) y *Uroleucon sonchi* (Linnaeus, 1767), que constituyen nuevos registros para la isla. Se presentan consideraciones generales para cada una de las especies mencionadas, así como su distribución geográfica en el archipiélago de Madeira, en la Macaronesia y en el Mundo.

Palabras clave: Aphidoidea, Aphididae, islas Salvajes, Selvagem Grande, *Macrosiphum euphorbiae*, *Myzus persicae*, *Rhopalosiphum padi*, *Uroleucon sonchi*.

1. INTRODUCTION

According to the available bibliography, the studies on the aphid fauna of Madeira began on the early 20th century, by TAVARES [19]. There has been an increasing knowledge since then, with more than 34 papers on the subject (PITA & ILHARCO [17]). However, nothing was known about the aphids of the Salvage Islands (OROMÍ *et al.* [12]; ARECHAVALETA *et al.* [1]). This is a small Portuguese archipelago comprising three islands (Selvagem Grande, Selvagem Pequena and Ilhéu de Fora) and located 163 miles south of the Madeira Island. Since 1971 it is classified as a Natural Reserve. The primary reasons for such lack of information are probably the difficulty to access, disembark and stay on these islands. The first record of *Aphis craccivora* Koch (1854) on *Lotus salvagensis* for the Salvage Islands (Selvagem Pequena) was only recently brought to light (PITA & GOMES [15]).

This work presents data from the samplings carried out at Selvagem Grande and contributes to the updating of knowledge on the aphid biodiversity of those islands.

2. MATERIAL AND METHODS

In this paper, eight aphid samples collected in 2004 at Selvagem Grande are analyzed. Two further samples, from 2002 and 2003, were also included in this study. The third author, D. Menezes, technician of the Natural Park of Madeira, was responsible for some of the samplings. The other collectors were *Nature Surveillants* of the same Park who participated in the field work, according to the periodical stays on the island: the second author (I. Silva), responsible for most samplings, and David Teixeira, João Clode, João Paulo, Luís Ferro and Maurílio Gonçalves.

Samples A1851, A1852, A1853 and A1854 resulted from several plant quadrat surveys, and no plant identification was provided. Samples A1855, A1856 and A1857 were directly sampled, but unfortunately no record on the hosts was provided either. Samples A1858, A1859 and A1860 were collected from *Lycopersicon esculentum* Miller, *Sonchus asper* (L.) Hill and *Sonchus tenerrimus* L., respectively, the former two in Chão dos Caramujos (80m) and the later in another place of the plateau, at the same altitude. The number of collected individuals was relatively small, except for samples A1855 (about 430) and A1857 (about 80). For all the samples, the usual methods for aphids were used (ILHARCO [10]).

All the samples are preserved in ethanol and/or on slide mounts and are part of the Aphid Collection of the first author, referred by a letter and a number (e.g. A1860).

For each sample the following data are presented: place of collection, record number, date, number of specimens studied, host plant (when known), collector and legator.

3. RESULTS AND DISCUSSION

Four species were identified which are new records for the Salvage Islands: *Macrosiphum euphorbiae* (Thomas, 1878), *Myzus persicae* (Sulzer, 1776), *Rhopalosiphum padi* (Linnaeus, 1758) and *Uroleucon sonchi* (Linnaeus, 1767).

Some general considerations are made about these four species, as follows. After the name of the species, it is indicated whether it is native or introduced, and the type of rela-

tionship with the host. For each species, the distribution in the Archipelago of Madeira (MD), with indication of the first island where it was recorded (PITA & ILHARCO [17]), in Macaronesia (MAC), with the most recent references, and in the world (MU) is also given.

Macrosiphum euphorbiae (Thomas, 1878)

New for Salvage Islands. Introduced. Polyphagous.

MD: Recorded from Madeira (GRANATE [7]; MARQUES [11]) and Porto Santo (GRANATE [7]; MARQUES [11]).

MAC: Occurring in the Azores - Faial, Terceira, São Miguel (PITA & ILHARCO [18]) and Canary Islands, in all islands (PÉREZ & OROMÍ [13]); absent in the Cape Verde Islands (PÉREZ HIDALGO *et al.* [14]).

MU: Cosmopolitan (BLACKMAN & EASTOP [2]).

Material studied: SALVAGE ISLANDS - Selvagem Grande (A1852, 18-March-2003, 2 apterae, col. D. Menezes, J. Clode & D. Teixeira, leg. S. Fontinha; A1854, March-2004, 4 apterae, 1 alate, col. I. Silva, leg. S. Fontinha; A1857, 21-April-2004, 6 apterae, 3 alatae, col. I. Silva, leg. S. Fontinha; A1859, 20-May-2004, 4 apterae, 3 alatae, on *Lycopersicon esculentum*, col. I. Silva, leg. S. Fontinha).

Myzus persicae (Sulzer, 1776)

New for Salvage Islands. Introduced. The primary host is mainly *Prunus persica*, sometimes other *Prunus* species. Polyphagous on the secondary host.

MD: Recorded from Madeira (GOUVEIA [5, 6]), Porto Santo (ILHARCO [8]) and Deserta Grande (PITA & ILHARCO [16, 17]).

MAC: Occurring in the Azores - Faial, Terceira, São Miguel (PITA & ILHARCO [18]), Canary Islands, in all islands (PÉREZ & OROMÍ [13]) and Cape Verde Islands - Santo Antão, Santiago and Fogo (PÉREZ HIDALGO *et al.* [14]).

MU: Cosmopolitan (BLACKMAN & EASTOP [2]).

Material studied: SALVAGE ISLANDS - Selvagem Grande (A1856, 21-April-2004, 1 alate, col. I. Silva, leg. S. Fontinha).

Rhopalosiphum padi (Linnaeus, 1758)

New for Salvage Islands. Introduced. The primary host is primarily *Prunus padus*, rarely other *Prunus* species. The secondary hosts are Gramineae, sometimes other Monocotyledonous.

MD: Recorded from Madeira (EASTOP [4]).

MAC: Occurring in the Azores - Pico, Terceira, São Miguel, Santa Maria (PITA & ILHARCO [18]) and Canary Islands - La Palma, La Gomera, Tenerife, Gran Canaria, Lanzarote (PÉREZ & OROMÍ [13]); absent in the Cape Verde Islands (PÉREZ HIDALGO *et al.* [14]).

MU: Cosmopolitan (BLACKMAN & EASTOP [2]).

Material studied: SALVAGE ISLANDS - Selvagem Grande (A1851, 18-February-2002, 1 alate, col. D. Menezes, J. Paulo & L. Ferro, leg. S. Fontinha).

Uroleucon sonchi (Linnaeus, 1767)

New for Salvage Islands. Native. The hosts are liguliflorous Compositae, mainly *Sonchus* spp., *Reichardia* spp. and *Lactuca* spp.

MD: Recorded from Madeira (ILHARCO [9]) and Porto Santo (ILHARCO [8]).

Obs.: It should be noted that the hosts of this aphid species in Selvagem Grande belong to the same genus but to different species from the ones recorded from the Archipelago of Madeira - *Sonchus oleraceus* and *Sonchus* sp.

MAC: Occurring in the Azores - Faial, Terceira, São Miguel, Santa Maria (PITA & ILHARCO [18]) and Canary Islands, in all islands (PÉREZ & OROMÍ [13]); absent in the Cape Verde Islands (PÉREZ HIDALGO *et al.* [14]).

MU: Europe, Middle East, North America, Mexico, South America, North Africa, Uganda, Tanzania, Asia, New Zealand, Australia (CARVER [3]; BLACKMAN & EASTOP [2]).

Material studied: SALVAGE ISLANDS - Selvagem Grande (A1853, 19-March-2004, 1 apterous, col. D. Menezes & M. Gonçalves, leg. S. Fontinha; A1855, 13-April-2004, 6 apterae, col. I. Silva, leg. S. Fontinha; A1858, 20-May-2004, 5 apterae, 1 alate, 1 alate nymph, on *Sonchus asper*, col. I. Silva, leg. S. Fontinha; A1860, 20-May-2004, 5 apterae, 3 alatae, 2 alate nymph, on *Sonchus tenerrimus*, col. I. Silva, leg. S. Fontinha).

Taking the available bibliography and the new records into account, the aphid fauna of the Salvage Islands may be thus represented: Salvage Islands 5 - Selvagem Grande 4 and Selvagem Pequena 1. Until now, there has been no aphid record from Ilhéu de Fora. All the referred aphid species have been recorded before from the Archipelago of Madeira and from other islands of Macaronesia. Despite the limitations for sampling on the island (distance, dependence on the staying periods of the Park personnel, topography, scarcity of means), it would be worthwhile to carry out further samplings and thus extend the knowledge on the aphid fauna of the Salvage Islands.

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