

HAUPTIDIA LAPIDICOLA (VIDANO 1964), FIRST RECORD FOR SPAIN AND DATA ON THE IBERIAN DISTRIBUTION OF HAUPTIDIA MAROCCANA (MELICHAR 1907) (HEMIPTERA: CICADELLIDAE)

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Abstract: Species of the genus *Hauptidia* are associated to herbaceous plants. In Spain only two species of this genus are known: *H. distinguenda* (Kirschbaum, 1868) and *H. maroccana* (Melichar, 1907). In the study of material from northern and southern Spain, a little known species was found: *H. lapidicola* (Vidano, 1964). This leafhopper, found so far only in Portugal and Italy, is a new record for the Spanish fauna. Data on distribution, ecology and host plants for this species and *Hauptidia maroccana* are given in this work.

Key words: Hemiptera, Cicadellidae, leafhoppers, *Hauptidia*, Spain, distribution

Hauptidia lapidicola (Vidano 1964), primera cita para España y datos sobre la distribución ibérica de Hauptidia maroccana (Melichar, 1907) (Hemiptera: Cicadellidae)

Resumen: Las especies del género *Hauptidia* se encuentran asociadas a plantas herbáceas. En España se conocen dos especies: *H. distinguenda* (Kirschbaum, 1868) y *H. maroccana* (Melichar, 1907). Estudiando material procedente del norte y sur de España se encontró una especie poco conocida, *H. lapidicola* (Vidano, 1964). Esta cigarrilla sólo se conocía de Portugal e Italia y se cita por primera vez para la fauna española. En este trabajo se aportan datos sobre la distribución, ecología y plantas huéspedes de *Hauptidia maroccana* y *H. lapidicola*.

Palabras clave: Hemiptera, Cicadellidae, cigarrillas, *Hauptidia*, España, distribución

Introduction

The genus *Hauptidia* was established by DWORAKOWSKA (1970) and includes as type species *H. distinguenda*. The six species of this genus known in Europe live chiefly on herbaceous plants. Within the Iberian Peninsula *H. lapidicola*, *H. distinguenda* and *H. maroccana* (NAST, 1987; QUARTAU, 1981, 1990) are known to occur in Portugal but in Spain only the last two have been recorded (NAST, 1987). In this country *Hauptidia distinguenda* has been recorded from Ciudad Real (FUENTE, 1920) while *H. maroccana* is known from Álava, Valencia and Castellón (LASSO & LACHA, 1948; HERMOSO DE MENDOZA & MEDINA, 1979; LLACER *et al.*, 1986; MEDINA *et al.*, 1981). Of these three species, *H. maroccana*, causes the most important economic damages. It is responsible for serious infestations of glass houses cultures in several countries and has also been recorded as a pest to several vegetal crops, such as tomatoes and cucumbers but also to some ornamental plants (DELLA GIUSTINA, 1989; HELYER & LEDIEU, 1986; MAISONNEUVE *et al.*, 1995; WARDLOW & TOBIN, 1990).

This work gives new data on the distribution of the species of this genus in the Iberian Peninsula.

Material and methods

Specimens were sampled by sweeping with a net on plant foliage. Male genitalia were macerated in 10 % KOH, then rinsed in distilled water and placed in a drop of glycerine. Drawings were performed using the camera lucida attached to a microscope.

Thirty-eight specimens were examined and identification was based on the works of DELLA GIUSTINA (1989), QUARTAU

(1981, 1990) and RIBAUT (1936). For the three species of *Hauptidia* present in the Iberian peninsula, a host plant list was compiled based on published information which follows the nomenclature of Flora Europaea (TUTIN *et al.*, 1980)

Results and discussion

***Hauptidia maroccana* (Melichar, 1907)**

The most distinctive characters of the species of this genus are the aedeagus shape and the styles. Externally they are similar in appearance and size but coloration, especially the coloured band along the cubital cell, is different among some species (RIBAUT, 1936). The specimens of *H. maroccana* examined were similar to those drawn by RIBAUT (1936).

Host plants: According to food plant records, this species is polyphagous and its host plants include species of the following eight families: Scrophulariaceae, Caryophyllaceae, Solanaceae, Urticaceae, Lamiaceae, Primulaceae, Asteraceae and Curcubitaceae (DELLA GIUSTINA, 1989; HELYER & LEDIEU, 1986; LE QUESNE & PAYNE, 1981; QUARTAU, 1981; RIBAUT, 1936) (see Table I). In England this species was sampled on cultivated plants of *Primula* and *Chrysanthemum* (LE QUESNE & PAYNE, 1981). It was recorded in France as a pest of tomatoes and ornamentals (MAISONNEUVE *et al.*, 1995; WARDLOW & TOBIN, 1990). In eastern Spain (Valencia and Castellón) a small number of specimens of this species were found with other leafhoppers in fruit tree fields of apricots, peaches and the following citric species: *Citrus sinensis* (L.)

Osbeck, *C. reticulata* and *C. paradisi* Macfad (HERMOSO DE MENDOZA & MEDINA, 1979; LLACER *et al.*, 1986; MEDINA *et al.*, 1981). However, since the sampling methods used in these works were light traps and colour sticky traps, two non-specific traps, these fruit plants cannot be considered as food plants.

Distribution: In Europe this species is known from France, Great Britain, Spain, Portugal and the former Yugoslavia, but is present also in Morocco (NAST, 1972, 1987). In Portugal this species was sampled in Lisbon (QUARTAU, 1981) and in Spain it is present in the provinces of Pontevedra (this work), Alicante, Valencia, Castellón and Álava (LASSO & LACHA, 1948; MEDINA *et al.*, 1981). All these records suggest that this species is widely distributed in the Iberian Peninsula.

Material examined: Pontevedra: Portonovo (Sanxenxo), 42° 25'N 8° 47'O, 5m, 6.IX.1991, 1♂ on grasses around a stream; Paxariñas (Sanxenxo), 20 m, 21.X.1994, 1♂, 1♀, *leg.* D. Aguin-Pombo.

Hauptidia lapidicola (Vidano, 1964)

VIDANO (1964) described this species from Italy but DWORAKOWSKA (1981) gave the first illustrations of male genitalia, which were redrawn later by DELLA GIUSTINA (1989). Later, QUARTAU (1990) re-described this species using material from the south of Portugal and Berlenga island. All these illustrations show that specimens from different localities differ morphologically in the shape of male aedeagus and styles. Spanish specimens were similar to those from southern Portugal drawn by QUARTAU (1990) but they show also some slight differences. The lateral horn arising from the socle of the aedeagus is wider than in specimens from Portugal (QUARTAU, 1990) (Figure 1b). The apical part of styles was slightly more curved than Portuguese specimens and even more than is shown in Della Giustina's figures (Figure 1a and plate 132). All these differences indicate that this species shows intraspecific variation in the shape of these two male genital structures.

Host plants: The information on host plant associations of this species is very limited and so far it has been associated only to *Teucrium chamaedrys* (DELLA GIUSTINA, 1989). Spanish specimens were sampled on an unidentified rupicolous plant growing on a small rocky place between olive trees. It is very likely that these specimens were hibernating. In Sicily this species was found on Mt. Etna in clearings of pure forests of *Castanea sativa* Mill. and at altitudes between 400 and 1900 m (D'URSO & GUGLIELMINO, 1990, 1991).

Distribution: It is a western Mediterranean species. Besides Spain this species is known only to be from Portugal and Italy. In Portugal it is present in the Algarve region and Berlenga Grande Island, while in Italy it is present in the south, as well as in Sicily and Sardinia (D'URSO, 1995; NAST, 1972, 1987; QUARTAU, 1990).

Material examined: Córdoba: Cruce Luque-Zuheros, Zuheros, 37° 33'N 4° 19'W, 700 m, 30.I.1993; 12 ♂♂, 23 ♀♀, *leg.* M. Baena.

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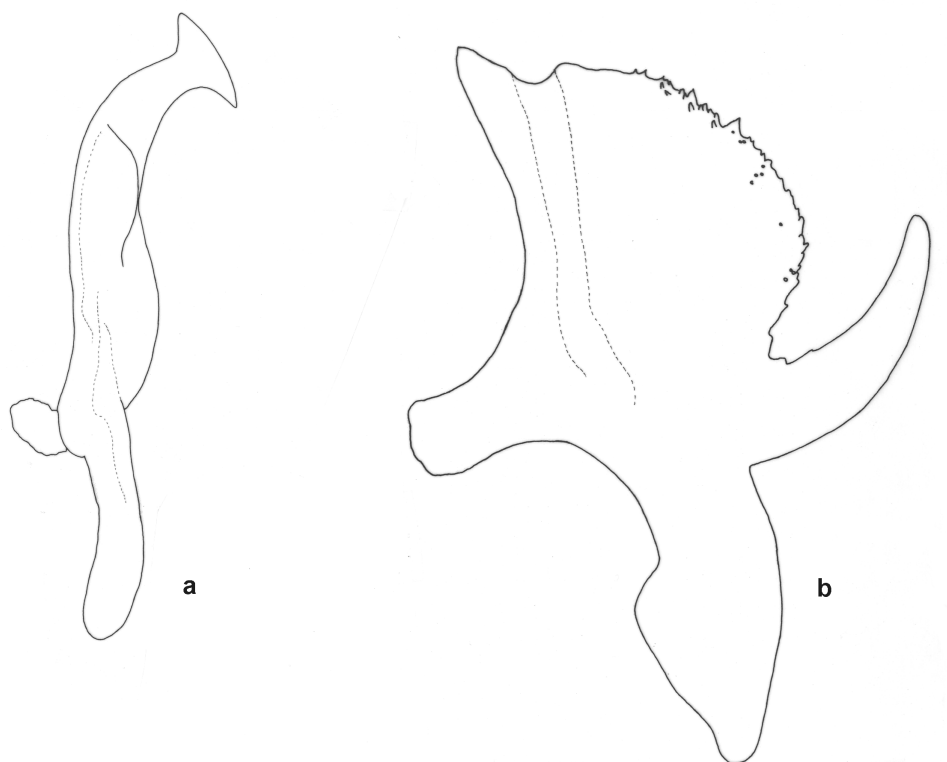


Fig. 1. a-b Genital structures of *Hauptidia lapidicola*. a. left style in dorsal view (x37). b. aedeagus in lateral view (x60).

Fig. 1. a-b Estructuras genitales de *Hauptidia lapidicola*. a. estilo izquierdo en vista dorsal (x37); b. edeago en vista lateral (x60).

Table I. Food plants reported in the scientific literature for the three species of the genus *Hauptidia* present in Spain.

Tabla I. Plantas nutricias referidas en la bibliografía para las tres especies del género *Hauptidia* presentes en España.

Species	Specificity	Plant Families	Plant Species	Literature
<i>H. maroccana</i> (Melichar, 1907)	Polyphaga	Scrophulariaceae	<i>Digitalis purpurea</i> L. <i>Scrophularia nodosa</i> L.	Della Giustina, 1989 Le Quesne <i>et al.</i> , 1981 Ribaut, 1936
		Caryophyllaceae	<i>Silene dioica</i> (L.) Clairv.	Le Quesne <i>et al.</i> , 1981
		Solanaceae	<i>Lycopersicon aesculentum</i> Mill.	Jacobson & Chambers, 1996
		Urticaceae	<i>Parietaria officinalis</i> L.	Ribaut, 1936 Della Giustina, 1989
		Labiatae	<i>Stachys sylvatica</i> L.	Le Quesne <i>et al.</i> , 1981
		Cucurbitacea	<i>Cucumis melo</i> L. <i>Cucumis sativus</i> L.	Helyer, 1986 Della Giustina, 1989
		Primulaceae	<i>Primula vulgaris</i> L. <i>Primula</i> sp.	Quartau, 1981 Le Quesne <i>et al.</i> , 1981
		Compositae	<i>Chrysanthemum</i> sp.	Le Quesne <i>et al.</i> , 1981
<i>H. lapidicola</i> Vidano, 1964	Monophaga	Labiatae	<i>Teucrium chamaedrys</i> L.	Della Giustina, 1989
<i>H. distinguenda</i> (Kirschbaum, 1868)	Monophaga	Geraniaceae	<i>Geranium robertianum</i> L. <i>Geranium</i> sp.	Le Quesne <i>et al.</i> , 1981 Della Giustina, 1989