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A Leafhopper Pest of Plants in the Mint Family, *Eupteryx decemnotata* Rey (Hemiptera: Auchenorrhyncha: Cicadellidae), Ligurian Leafhopper, New to North America

Alessandra Rung

Plant Pest Diagnostics Branch
California Department of Food & Agriculture
3294 Meadowview Road
Sacramento, CA 95832-1448, U.S.A.

Susan E. Halbert

Florida Department of Agriculture and Consumer Services
Division of Plant Industry
PO Box 147100
Gainesville, FL 32614-7100

David C. Ziesk

Florida Department of Agriculture and Consumer Services
Division of Plant Industry
PO Box 147100
Gainesville, FL 32614-7100

Raymond J. Gill

Plant Pest Diagnostics Branch
California Department of Food & Agriculture
3294 Meadowview Road
Sacramento, CA 95832-1448, U.S.A.

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Alessandra Rung

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Raymond J. Gill

Plant Pest Diagnostics Branch
California Department of Food & Agriculture
3294 Meadowview Road
Sacramento, CA 95832-1448, U.S.A.

Abstract. The Ligurian leafhopper, *Eupteryx decemnotata* Rey (Hemiptera: Auchenorrhyncha: Cicadellidae), is reported for the first time in North America (USA: Florida and California). Diagnostic characters for species identification, summary of hosts and damage, and U.S. known distribution are given.

Key Words. Ligurian leafhopper, sage leafhopper, distribution, North America, *Eupteryx decemnotata*

Introduction

A leafhopper was intercepted by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) by inspector Sol F. Looker on topiary rosemary plants from California at a discount store in Palatka (Putnam County) on 3 December 2008. There were hundreds of cast skins present, but only a single male specimen in poor condition was recovered. After dissection of that specimen, we suspected that the insect was *Eupteryx decemnotata* Rey, a pest species from Europe. Since then, confirmed populations of *E. decemnotata* have been found in two California counties, Napa and Riverside.

This species, known as Ligurian leafhopper in Europe (named for the Ligurian Sea, adjacent to NW Italy near the border with France), has recently experienced rapid range expansion. Nickel and Holzinger (2006) attribute this spread to extensive trade and transport of catnip plants, which have become popular ornamental plants in Europe, particularly in Germany. Ligurian leafhoppers were known only from the Mediterranean area until the mid 1980s, but they have been discovered since the mid 1990s in Portugal, Switzerland, Austria, Slovenia, Greece, much of Germany, and the UK (Nickel and Holzinger 2006). Ligurian leafhopper is known to be a pest of many popular herbs in the mint family such as rosemary, sage, marjoram, catnip, mint and oregano (Nickel and Holzinger 2006).

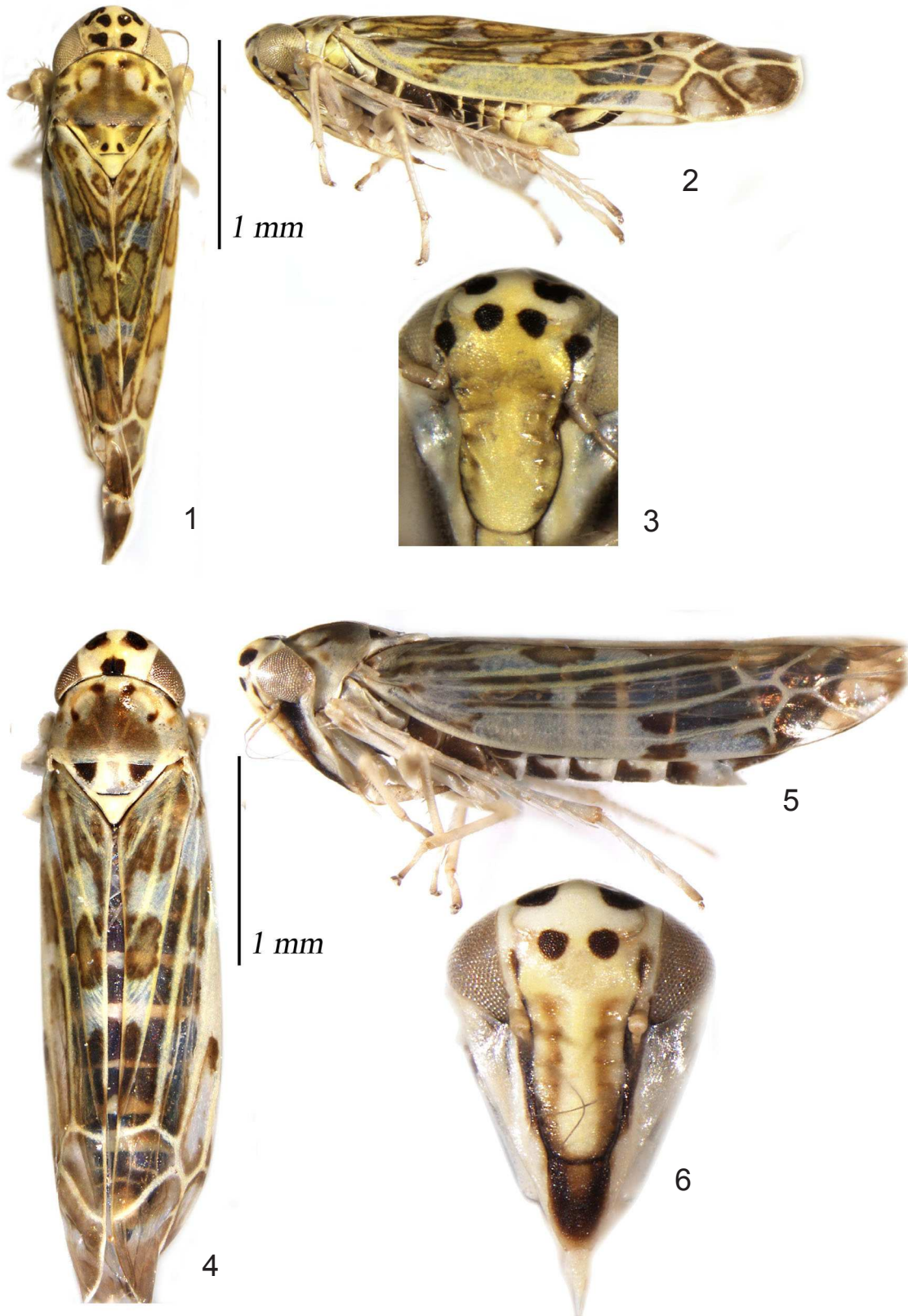


Figure 1-6. *Eupteryx* spp. 1-3) *Eupteryx decemnotata* Rey. 1) Body, dorsal view. 2) Body, lateral view. 3) Face, anteroventral view. 4-6) *Eupteryx melissae* Curtis. 4) Body, dorsal view. 5) Body, lateral view. 6) Face, anteroventral view.

Identification. Ligurian leafhoppers are tiny, less than 3 mm long (Fig. 1, 2). The presence of 5 pairs of conspicuous spots on the head (Fig. 1, 3) will separate this species from congeners. According to Nickel and Holzinger (2006), the extent of these spots may vary, and in strongly pigmented specimens, neighboring spots on the vertex may be fused. The sage leafhopper, *Eupteryx melissae* Curtis (also referred to as the “mint leafhopper”) (Fig. 4-6), is widespread in the northern U.S.A and also is a pest of plants in the mint family. It has a similar wing pattern, but has fewer spots on the head (usually 5, at most 7 spots; Fig. 4, 6). Further, the aedeagus in *E. decemnotata* has serrated (not smooth) lateral ridges, a subapical process, and moderately curved but not crossed lateral appendages (see Fig. 1-2 in Nickel and Holzinger 2006). The lateral ridges of the aedeagus of *E. melissae* are smooth (not serrated), the subapical process is absent and the appendages cross ventrally (Fig. 966 in Beirne 1956).

There are few records of other adventive species of *Eupteryx* having become established in the United States. A probable US record is *E. atropuncata* (Goeze) which may have been misidentified as *E. aurata* (Linnaeus) in Utah and Maine (Hamilton 1983). More reliably, *E. atropuncata* also has been recorded from New York, Pennsylvania and Michigan (Hoebeke and Wheeler 1983). A few other species of *Eupteryx* have become established in Canada (see Hamilton 1983 for a list). In Europe, *E. decemnotata* is most similar to *E. zelleri* (Kbm.). Characters that distinguish between the latter two species, and drawings of them, can be found in Nickel and Holzinger (2006).

Hosts. Nickel and Holzinger (2006) and Maczey and Wilson (2004) list hosts of Ligurian leafhopper. They include only members of the family Lamiaceae: *Melissa officinalis* L. (lemon balm), *Mentha x piperita* L. (peppermint), *Nepeta cataria* L. (catnip, catmint), *Nepeta* spp., *Ocimum basilicum* L. (basil), *Origanum majorana* L. (marjoram), *Origanum vulgare* L. (oregano), *Rosmarinus officinalis* L. (rosemary), *Salvia officinalis* L. (sage), *Thymus vulgaris* L. (thyme), and *Thymus* spp., *Eupteryx melissae* has a somewhat wider host range, including at least one plant in the family Malvaceae (Stewart 1988, Nickel and Holzinger 2006).

Damage and economic importance. As other leafhoppers in the subfamily Typhlocybinae, *E.*



Figure 7-8. Damage on rosemary by the Ligurian leafhopper, Napa Co. **7)** *Eupteryx decemnotata* Rey (habitus) and damage on rosemary leaf. **8)** Damaged rosemary.

decemnotata is a mesophyll feeder. Damage is caused when the insect punctures the cells and removes their contents, leaving an air filled void. This produces a characteristic stippling. In Europe, populations can be high, causing significant damage to the plants. Severe damage to cultivated plants by this species was reported in Switzerland, Greece and Germany (Nickel and Holzinger 2006). In Napa Co., California, high populations were found causing severe stippling on lower, older leaves of *R. officinalis* (upright variety).

U.S. distribution. All material from California mentioned below has been deposited in the California State Collection of Arthropods (CSCA), Sacramento, CA. In **California**, males, females and nymphs of *E. decemnotata* have been collected from *Rosmarinus* sp. in a nursery in **Riverside County** (San Jacinto, Alta Nursery, 33.805177°N, 116.958287°W, 1 April 2009, ex. *Rosmarinus officinalis* M. Lahti Coll.), and in field situations in **Napa County** (Napa, Riverwood Apartments, 38.321457°N, 122.285140°W, 12 March 2009, ex. rosemary, King and Stewart Coll., 26 May 2009, A. Rung Coll., ex. rosemary; Santa Helena, Franciscan Winery, 38.473364°N, 122.432121°W, 11 March 2009, ex. rosemary, King, Norton and Stewart Coll.; Herrick Grapevines, 38.471614°N, 122.444095°W, 11 Feb 2009, ex. *Rosmarinus* sp.; S. Wooley Coll).

In **Florida** there has been only one collection of the Ligurian leafhopper, the find at the discount store in **Putnam County**. This specimen is at the Florida State Collection of Arthropods (FSCA). However, there are anecdotal reports of similar damage to shipments of rosemary topiaries in discount stores in other counties.

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