

Outbreak of *Acinipe deceptoría* (Bolívar, 1878) and *Acinipe segurensis* (Bolívar, 1908) (Orthoptera: Pamphagidae) in Castilla-La Mancha (Iberian Peninsula)

Ricardo Gómez Ladrón de Guevara¹, Jesús Pavón Benito¹ & Juan José Presa²

¹ Department of Science and Technology. ETSIA. University of Castilla-La Mancha. 02071 Albacete. Spain.

² Area of Zoology. Faculty of Biology. University of Murcia. 30100 Espinardo, Murcia. Spain.

Resumen

Correspondence

J. J. presa

E-mail: jjpresa@um.es

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Proliferación anormal de las poblaciones de Acinipe deceptoría (Bolívar, 1878) y Acinipe segurensis (Bolívar, 1908) (Orthoptera: Pamphagidae) en Castilla-La Mancha (Península Ibérica).

Se cita por primera vez la proliferación anormal de las poblaciones de dos especies de panfágidos, *Acinipe deceptoría* (Bolívar, 1878) y *Acinipe segurensis* (Bolívar, 1908) en la Península ibérica y su efecto como plaga destruyendo los romerales de distintas zonas de Castilla-La Mancha.

Palabras clave: Proliferación anormal, *Acinipe segurensis*, *Acinipe deceptoría*, Pamphagidae, Península Ibérica.

Abstract

It is recorded for first time the outbreak of two species of Pamphagidae, *Acinipe deceptoría* (Bolívar, 1878) and *Acinipe segurensis* (Bolívar, 1908) in the Iberian Peninsula and their effects as pest on rosemary shrub of different zones in Castilla-La Mancha, Spain.

Key words: Outbreak, *Acinipe deceptoría*, *Acinipe segurensis*, Pamphagidae, Iberian Peninsula.

Introduction

The Orthoptera are phytophagous insects harmful to the wild and cultivated plants, some of its species are known to be highly devastating.

In the Iberian Peninsula some species are considered as possible pests of the agricultural areas, among which *Calliptamus wattenwylanus* (Pantel, 1896), *Decticus albifrons* (Fabricius, 1775), *Dociostaurus maroccanus* (Thunberg, 1815), *Eyprepocnemis plorans* (Charpentier, 1825), *Platystolus martinezi* (Bolívar, 1873), *Tettigonia viridissima* (Linnaeus, 1758) (Fernandes 1965, Hernández & Presa 1984, Barranco Vega 1997) stand out.

Although these species have different biology, all of them present aggregation phenomena producing the destruction of the vegetation. When this phenomenon takes place, independently of the

species producing it, the Spanish farmers, call that enemy "the locust".

In the summer of 2007, we knew there were extensive areas of rosemary (*Rosmarinus officinalis*) attacked by "the locust" in Albacete and Cuenca provinces. The fact that the affected areas had not the ecological characteristics adapted for the proliferation of any of the species known as possible pest in the Iberian Peninsula called our attention. Moreover, rosemary does not have practically any pest affecting it seriously. In fact, in some agricultural zones it is used as hedges surrounding the crops in order to take advantage of its repellent, and sometimes toxic power, deterring many species of harmful insects.

All that incited us to study the zone and to try to identify the species producing these effects and that, according to the popular tradition, attacks from time to time the rosemary.

Material and Methods

Sampled areas

Albacete Province: Monte del Portillo, Yeste municipal area. Altitude 850 meters. A reference area of 3-4 ha was taken around coordinates X = 0559800 and Y = 4243530. Vegetation is composed of woodlands of the Sector Manchego-Murciano composed of Aleppo pine (*Pinus halepensis*) with common juniper (*Juniperus oxycedrus*), abundant rosemary (*Rosmarinus officinalis*), male rosemary (*Cistus clusii*), broom (*Retama sphaerocarpa*), mastic-tree (*Pistacia lentiscus*) and thyme (*Thymus vulgaris*); there are not crops in the visited area. Captures were done between 16 and 30 on August of 2007.

Cuenca Province: Collado de las Vigas, between municipal areas of Landete and Santa Cruz de Moya, at a mean altitude of 1.064 meters. A reference area of 15 ha was taken around the coordinates: X=646566, Y=4423193. Vegetation is composed of mixed pinegrove, Spanish juniper (*Juniperus thurifera*), Phoenician juniper (*Juniperus phoenicea*) and common juniper, with abundant rosemary, male rosemary, Hedgehog broom (*Eri-nacea anthyllis*) and thymes (woodlands of Sector Maestracense). Small dispersed plantations of almond-trees appear (*Amigdalus dulcis*). Captures were done between 17 and 30 on August of 2007.

Results

In Albacete, the species collected in highest number were:

Acinipe segurensis (Bolívar, 1908), *Calliptamus barbarus* (Costa, 1836), *Oedipoda caerulescens* (Linnaeus, 1758), *Oedipoda charpentieri* Fieber, 1853, *Ramburiella hispanica* (Rambur, 1838), *Pezotettix giornae* (Rossi, 1794), *Anacridium aegyptium* (Linnaeus, 1764) and *Steropleurus perezii* (Bolívar, 1877).

A. segurensis represented more than 96 % of the whole captures, with a density of 6.33 individuals/m² (Fig. 1). None of other species overcame 1 % of density.

In the studied area, defoliation affected mainly to rosemary plants (Fig.2), which lost between 80 % and 100 % of leaves.

Juniper, the second more affected species, lost their leaves in an 80 %. Male rosemary, mastic-



Figura.1. Individuos de *A. segurensis* sobre romero.
Figure 1. Individuals of *A. segurensis* on rosemary plant.



Figura.2. Detalle de la defoliación producida por *A. segurensis* sobre romero.
Figure 2. Detail of the defoliation produced by *A. segurensis* on rosemary plant.

tree and brooms lost leaves between 30 % and 70 %. *Pinus halepensis* presented minor defoliations, not reaching 20 % of the pine needle; some branches showed the bark little damaged.

In Cuenca, the most abundant species were:

Acinipe deceptoris (Bolívar, 1878), *Calliptamus barbarus*, *Oedipoda caerulescens*, *Oedipoda charpentieri*, *Ramburiella hispanica*, *Chorthippus binotatus* (Charpentier, 1825) and *Steropleurus brunneri* (Bolívar, 1876).

More than 96 % of the collected specimens belonged to *A. deceptoris*, which showed a density of 5.67 specimens/m². As in the previous locality, no other species reached densities of 1 %.

In this case, also, the observed defoliation mainly concerned the rosemary plants, which had leaves losses between 100 % and 80 % (Fig. 3).



Figura.3. Detalle de la defoliación total de una planta de romero producida por *A. deceptoria*.

Figure 3. Detail of the total defoliation on rosemary plant produced by *A. deceptoria*.

The other species were much less affected. Juniper, was also the second species more affected, losing leaves until 20 %. Phoenician and Spanish juniper presented minimal defoliations, as well pine's species; which only showed small damages in the bark in some branches.

The small almond-trees plantations adjacent to the area affected by grasshoppers did not present evident damages.

Discussion

The outbreak of an Orthoptera species is not considered a very often phenomenon, probably because it is little studied (Uvarov, 1977). The existing information on proliferation of Pamphagidae's species is very scarce. Llorente & Presa (1997) mentioned a proliferation of *A. segurensis* in Almería, and Mendizabal (1948), mentioned another due to *Acinipe sp.* also in Almería, Outside the Peninsula they are only known some data on different species of *Pamphagus* from Italy (Massa & LoVerde, 1990) and the proliferation of *Ocner-*

idia volxemi (Bolívar, 1878) recorded by Bounechada and Doumandji (2003) from Algeria.

The data provided here on number of collected specimens for both *Acinipe* species, with densities of 6,33 and 5,67 individuals/m², leads us to consider them as indicators of an outbreak. It is worth of note that populations of both species are not large (Llorente & Presa 1997).

We present these preliminary data owing to the unusual phenomenon due to two brachypterous species with few numbered populations and the scarce existing information on these outbreaks in Spain. A study on population monitoring of these species are in progress.

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