

Confirmation of the presence of *Ochlerotatus (Rusticoidus) quasirusticus* (Torres Cañamares) in the Iberian Peninsula, and the first record from the Madrid region

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Abstract

Ochlerotatus quasirusticus (Torres Cañamares) is reported for the first time in the region of Madrid. The distribution of this species and other members of the subgenus *Rusticoidus* in Europe is given.

Introduction

The subgenus *Rusticoidus* Shevchenko & Prudkina includes six European species (Reinert, 1999a). Of these, *Oc. refiki* and *Oc. rusticus* have distributions stretching from Russia to Iberia and extending north to the British Isles and/or Scandinavia. The other species, *Oc. krymmontanus* (Crimea), *Oc. lepidonotus* (Greece and Turkey), *Oc. quasirusticus* (Spain and north Africa) and *Oc. subdiversus* (Federal Republic of Yugoslavia and lower River Volga eastward into Asia) seem to have restricted southern distributions, principally in countries bordering the Mediterranean and Black Seas (Table 1). *Ochlerotatus quasirusticus* is also found in North Africa (Brunhes *et al.*, 2000).

The infrequently encountered species, *Oc. quasirusticus*, has been found only in Spain and Algeria, originally at Majadas in the Cuenca province of the autonomous region of Castilla-La Mancha (Torres Cañamares, 1951). There have been two subsequent records, from the provinces of Salamanca and Segovia, both in the autonomous region of Castilla-Leon (Encinas Grandes, 1982) and a further, more recent, record from Majadas (Eritja *et al.*, 1999). Brunhes *et al.* (2000), on re-examining the mosquitoes of African countries bordering the Mediterranean, conclude that the species present in Algeria is *Oc. quasirusticus* and not *Oc. rusticus* as previously stated.

The lectotype male, a paralectotype female, with slide mounted larval and pupal exuviae prepared from material collected by Torres Cañamares in 1950, are lodged in The Natural History Museum, London (Reinert, 1999b).

Survey at San Mamés

During the course of mosquito surveys in the autonomous region of Madrid, larvae and adults of *Oc. quasirusticus* were captured in a seasonally flooded meadow at San Mamés. This site is near the village of Villavieja de Lozoya on the region's mountainous border north of the city of Madrid. The larval site is large freshwater inundation, maximum diameter 90 m, with marginal emergent vegetation. The water originates from rainfall, and is therefore subject to seasonal change. The maximum depth in May is about 55 cm.

The flooding subsides progressively during the summer to dry out completely during August. However, it floods again during October and remains inundated throughout the winter, thereby providing ideal conditions for species such as *Oc. quasirusticus* and *Oc. rusticus*, which over-winter in the larval stage. In addition to *Oc. rusticus*, *Culiseta fumipennis* was also found in association with *Oc. quasirusticus*, which agrees with the findings of Encinas Grandes (1982).

Larval sites in the flooded meadow were sampled at fortnightly intervals during the spring months of March, April and May. The first larvae of *Oc. quasirusticus* were captured in early March, and were probably of the over-wintering generation. In the samples in mid-March, there was a decrease in the numbers of larvae, but thereafter captures of *Oc. quasirusticus* larvae increased progressively until reaching a peak at the end of April, and then diminished abruptly in May. These data agree with the findings of Torres Cañamares (1951), although he thought that drying of the pools was responsible for the diminishing larval population. During the current investigation it was observed that water levels in the larval sites remained stable during the period when the larval density was diminishing.

Oc. quasirusticus were captured only in April, and were all males; these data are similar to those of Encinas Grandes (1982) in the Salamanca area. The adults were collected during the day, while resting in the grass, *Juncus effusus*, by means of a suction trap.

Currently known distribution of *Oc. quasirusticus*

In the Iberian Peninsula, *Ochlerotatus quasirusticus* has now been recorded in four administrative regions of Spain. These cover a 450 km long swathe extending in a more or less easterly direction from Salamanca on the Portuguese frontier through Segovia and Madrid to Cuenca, which borders the maritime Comunidad Valenciana. This approximates the principal area of prevalence in Spain of *Oc. refiki* and *Oc. rusticus* (Encinas Grandes, 1982), though both these species are also present in frontier regions with France. The species is also present in Algeria.

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Table 1. Distribution of the species of the subgenus *Rusticoidus* with emphasis on Europe and the Mediterranean area

Country or Region	<i>Oc. lepidonotus</i>	<i>Oc. refiki</i>	<i>Oc. rusticus</i>	<i>Oc. quasirusticus</i>	<i>Oc. subdiversus</i>	<i>Oc. krymmontanus</i>
Spain		Torres Cañamares (1951); Encinas Grandes (1982); Eritja <i>et al.</i> (1999)				
Portugal			Ribeiro <i>et al.</i> (1988)			
France		Rioux (1965); Schaffner (1998)				
Italy		Coluzzi & Sabatini (1995)				
Balkan Peninsula		Snow & Ramsdale (1999)			Schaffner <i>et al.</i> (2001)	
Turkey		Ramsdale <i>et al.</i> (2001)				
Romania		Nicolescu (1995)				
Ukraine		Snow & Ramsdale (1999)				Alekseev (1989)
European Russia			Gornostaeva (2000)		Gornostaeva (2000)	
N & Central Europe		Snow & Ramsdale (1999)				
Algeria				Brunhes <i>et al.</i> (2000)		

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