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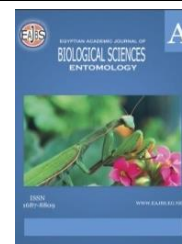
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First Record of *Greenidea ficicola* (Takahashi, 1921) (Hemiptera: Aphididae) in Biskra Region (Northern Sahara of Algeria)

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ABSTRACT

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For the first time in the Biskra region (Northern Sahara of Algeria), the aphid species *Greenidea ficicola* (Takahashi, 1921) (Hemiptera: Aphididae) was recorded in trap falls, which were set in order to study the diversity of aphids during the crop year 2015/2016 in the region of El Haouch. The distribution and description of this species are documented in this paper.

INTRODUCTION

Aphids infest most plants and constitute one of the most harmful groups of insects in temperate regions. The damage is caused by toxicosis or the weakening of the host. They are all the more serious as these insects have a formidable power of multiplication (Ronzon 2006). Due to the economic importance of aphids, many studies have been conducted on Algerian aphidofauna, which made them partially known (Remaudière&Leclant1974; Dartigues 1993; Blackman & Eastop 1994, 2000 ab, 2006; Laamari&Akkal 2002; Saharaoui 1999; Laamari & Hebbel 2006; Laamari *et al.* 2010, 2013ab; Benoufella-Kitous *et al.* 2014, 2019ab)

Among the 156 species of aphids that were listed by Lamari *et al.* (2013), we found *Greenidae ficicola*, from the genus *Greenidea*, which represents a small group of aphids, includes about 45 eastern Asiatic species, that live mainly on Fagaceae, Moraceae, Betulaceae, Juglandaceae, Mirtaceae and Theaceae (Pérez Hidalgo *et al.*, 2009). For the most part, their biology is unknown (Blackman & Eastop 1994, 2000ab, 2006; Sugimoto 2008; Holman 2009; Pérez Hidalgo *et al.*, 2009). The genus is distributed almost exclusively from Japan to eastern Australia and from India to the Philippines (Emden & Harrington 2007 ; Sugimoto 2008 ; Bella *et al.*, 2009).

The species *Greenidea ficicola* was detected in 2004 for the first time in Europe in Italy (peninsula and Sicily) and Spain (Barba Gallo *et al.*, 2005a, 2005b).

MATERIALS AND METHODS

For studying the diversity of aphids in a cereal agrosystem, fall traps were placed during the crop year 2015-2016 in El Haouch region 34° 33' 43" north, 6° 03' 05" east (Biskra, Northern Sahara of Algeria) (Fig. 1).

The collected specimens were kept separately in plastic bottles and they were stored in ethanol at 70 °. The Morphology of Aphids was studied under an optical stereo microscope, using the identification keys from (Halbert2004; Blackman & Estop 2006) and confirmed by Mr. Lounes Saharaoui from the entomological laboratory in the National School of Agronomy (ENSA), El Harrache.

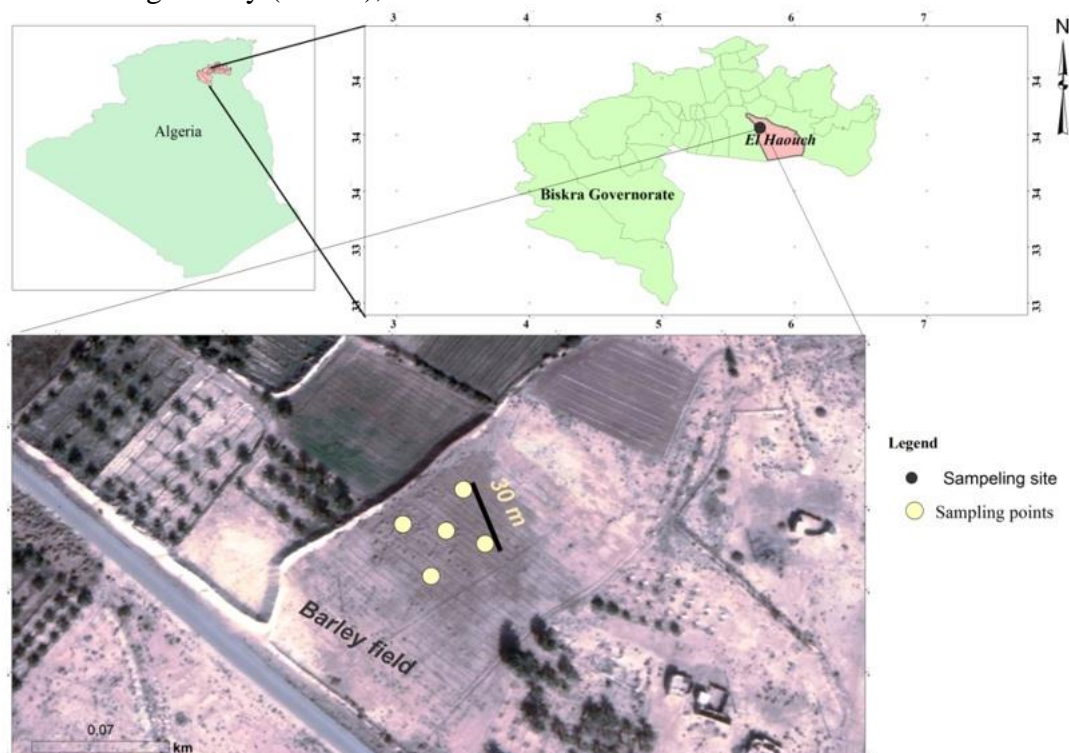


Fig. 1. The geographical location of the study site.

RESULTS AND DISCUSSION

Among the samples collected during the study period, two individuals of the species *G. ficicola* were captured in fall traps. It was identified by the presence of setae on the siphunculi, this morphological characteristic distinguishes all members of the Greenideini (Mifsud 2008).

G. ficicola Takahashi (Hemiptera: Greenideidae) is characterized by a pear-shaped body 1.7-2.2 mm in length. With long, hairy siphunculi (at least one-third of body length), yellowish-brown to green to dark brown curved outwards distally in apterae forms (Blackman & Eastop 2000; Halbert 2004) (Fig. 2).

In our study, we report the first record of the aphid species *Greenidae ficicola* in the region of Biskra, which is an arid region characterized by high temperatures that can reach an annual average of 22.59°C. It is also distinguished by the strong seasonal differences between the hottest month (July), with a monthly average of 34.81 °C and the coldest month (January) with a monthly average of 11.86 °C (national meteorological office of the wilaya of Biskra, 2020).

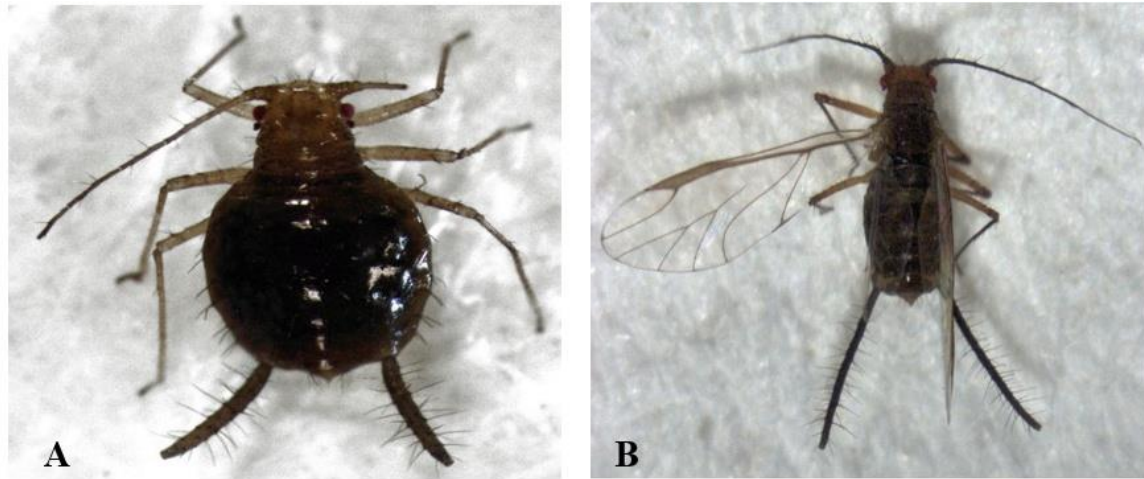


Fig. 2. The appearance of *Greenidea ficicola* (Takahashi, 1921). **A**, Apterae ; **B**, Alatae

Greenidea ficicola was encountered for the first time in Algeria by Laamari *et al.* (2013) is collected in April 2008 in the Algiers region (Algerian coast) on the leaves of the *Ficus* plant. The same results were observed in Tunisia by Ben Halima-Kamel (2009), where he reported this aphid on the Tunisian coast in 2007 on the leaves of *Ficus nitida*. In the Biskra region, it was collected on 27/03/2016 (Spring 2016).

The presence of *G. ficicola* in Biskra region can be attributed to the use of *Ficus* as the main ornamental plant in street edges and gardens. This exotic plant, which has adapted to all conditions of the region, is considered to be the main host plant of *G. ficicola* according to most of the studies carried out. But According to Blackman & Eastop (2000), in India, this species is recorded from other plants belonging to other families, including *Psidium guajava* L. However, Emden and Harrington (2007), mentioned that the Dicotyledonous trees are the host plants of *G. ficicola*. This aphid has also been reported in other areas of the Mediterranean region, in Italy (Barbagallo *et al.* 2005, Malta (Mifsud 2008), Spain (Pérez Hidalgo *et al.* 2009), and Syria (Ali Yassine 2015).

Conclusions

This distribution of *G. ficicola* and the variation of their host plants may lead to the spread of this aphid; therefore, it may become a pest on agricultural crops in the Biskra region, which is an important agricultural pole in Algeria. Thence, further studies on this aphid are recommended.

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