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First record of the sawfly family Xyelidae (Hymenoptera) from Malta

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ABSTRACT. *Xyela* cf. *altenhoferi* Blank, 2013 is recorded from Buskett (Malta). Its host is *Pinus halepensis*. This is the first species of the sawfly family Xyelidae to be found in the Maltese Islands.

KEY WORDS. Mediterranean, *Xyela* cf. *altenhoferi*, *Pinus halepensis*.

INTRODUCTION

The Xyelidae is the earliest known family of Hymenoptera in the fossil record, with the oldest members dating from the Early Triassic some 220 million years ago (BLANK, 2002). The majority of extant xyelids belong to the genus *Xyela*, which currently includes 28 Eurasian species (BLANK *et al.*, 2013). The larvae of all European species live in the male cones of pines (*Pinus* spp.), where they feed on the sporophylls (BLANK *et al.*, 2013).

Species richness of *Xyela* is considerably higher in the Mediterranean Region than in more northern parts of Europe (BLANK *et al.*, 2013). Nevertheless, the genus is generally under-recorded in the Mediterranean. The main reasons for this are probably the small size of the adults, combined with their short and often early flight period.

MATERIAL AND METHODS

The material listed below was collected using a Malaise trap located in the private grounds of the Verdala Palace, close to Buskett (35.86198°N, 14.40162°E; altitude 220m). This area represents one of the otherwise very rare semi-natural pine woodlands found in the Maltese Islands. The trap was mainly surrounded by *Pinus halepensis*.

Specimens were identified using BLANK *et al.* (2013), and are deposited in the private collection of D. Mifsud, and in the Senckenberg Deutsches Entomologisches Institut, Müncheberg. Stacks of photographs of adults immersed in ethanol were taken with a Leica DFC295 camera through an Olympus SZX12 microscope and converted to composite images using the software CombineZP (<http://hadleyweb.pwp.blueyonder.co.uk>).

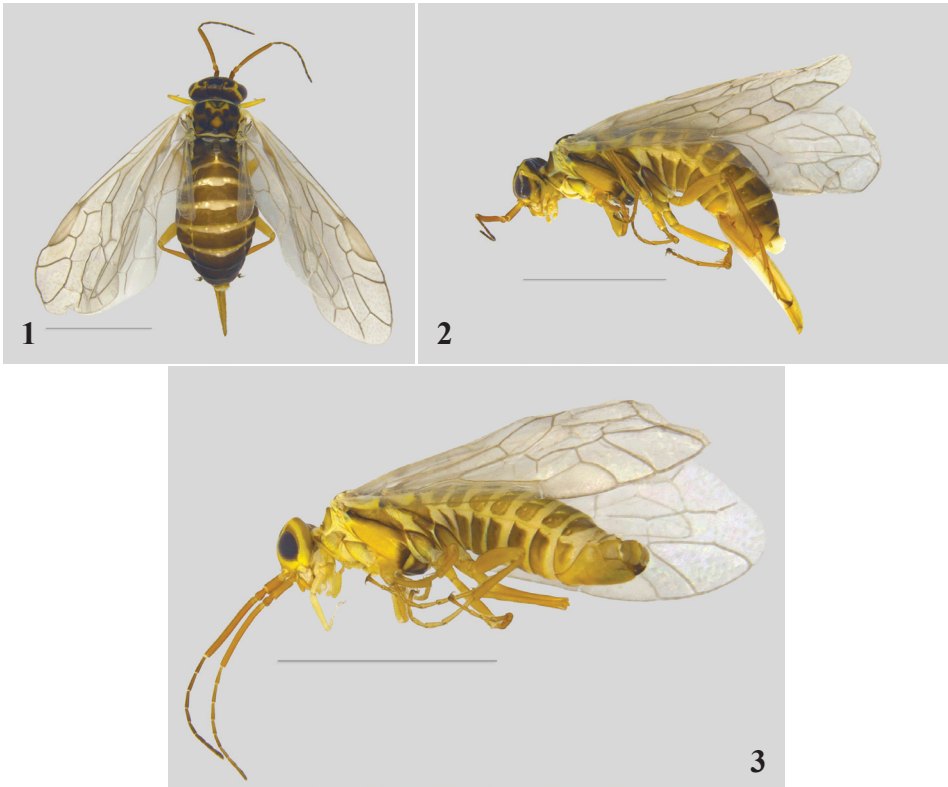
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RESULTS

Xyela cf. *altenhoferi* Blank, 2013

(Figs. 1-3)



Figures 1–3: *Xyela* cf. *altenhoferi*, Malta, Buskett. **1, 2:** female, dorsal and lateral; **3:** male, lateral. Scale lines = 2 mm.

Material examined: Malta, Buskett, Verdala Palace, 15.xii.2014-25.i.2015, 35 ♀♀ & 1 ♂, in Malaise trap, leg. D. Mifsud.

This is the first record of Xyelidae from the Maltese Islands. The host plant is most probably *Pinus halepensis*, this being the main pine species occurring at the collection site; other introduced pine species, namely *Pinus brutia* and *P. pinea* have been reported in the Verdala and Buskett areas, but are very rare.

DISCUSSION

BLANK (in BLANK *et al.*, 2013) described *Xyela altenhoferi* from a series of females reared from *Pinus halepensis* collected in Croatia. In the same work (p. 68), some other material found at sites with *P. halepensis* in Algeria, Morocco and Spain was also mentioned. These authors concluded that

“Such specimens are morphologically extremely similar to *X. altenhoferi* and *X. menelaus* [normal host: *Pinus nigra*] and could not be differentiated here with certainty.” It remains to be established, whether or not the populations on *P. halepensis* in other countries are conspecific with Croatian *X. altenhoferi*. BLANK *et al.* (2013) noted that the flight period of *X. altenhoferi* apparently commences rather early, because the Croatian larvae were collected in the first week of April. Evidently, *X. cf. altenhoferi* in Malta is even earlier still: flying already in January. A further interesting trait of the species, is that it is possibly mainly parthenogenetic, whereas other *Xyela* species are all thought to reproduce sexually. No males of *X. altenhoferi* are known, nor of *X. cf. altenhoferi* from Algeria, Morocco or Spain. The single male collected in Malta seems, so far, to be unique.

Pinus halepensis is native to the Maltese Islands, as evidenced by various works and summarised in STEVENS & BALDACCHINO (2000), with the latest findings as included in GAMBIN *et al.* (2015), which confirm that *Pinus* pollen had a considerable presence in Malta some 2,000 years ago. Nevertheless, although formerly seemingly frequent, the species was reported as almost extinct in the wild by the beginning of the 20th Century, as indicated by SOMMIER & CARUANA GATTO (1915). BORG (1927) later noted that the species in Malta: was “cultivated for ornament; naturalised in ...; formerly probably a true native. The ancient trees ... existing in San Antonio Gardens, in the Maglio and elsewhere are said to have been grown from seed produced by trees which formerly existed truly wild at Ghajn Żnuber ... and at Wied Żnuber”. A very large pine tree at l-Imġiebaħ (Malta) may actually be a remnant of the original wild stock. The species is now increasing in the wild, and is popular in afforestation schemes. It thus seems likely that although most of the original native stock was destroyed, new plantations were established almost simultaneously. If this is the case, then it is not unlikely that *Xyela cf. altenhoferi* also had a continuous presence in Malta. On the other hand, this sawfly’s probably largely parthenogenetic mode of reproduction, would make it easily capable of establishing itself after accidental introduction (or natural dispersal on air currents) of just a single individual.

Xyela cf. altenhoferi is the sixth species of sawfly to be recorded from the Maltese Islands. The other five are Tenthredinidae (LISTON & ZERAFA, 2012).

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