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Acronicta strigosa ([Denis & Schiffermüller], 1775) - a new observation in Piedmont region confirms the presence of the species in Italy (Lepidoptera: Noctuidae)

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Abstract

The present study confirms the presence of *Acronicta strigosa* ([Denis & Schiffermüller], 1775) in Italy a century after the last record.
Keywords: Lepidoptera, Noctuidae, *Acronicta strigosa*, new record, Piedmont, Italy.

Acronicta strigosa **([Denis & Schiffermüller], 1775) - una nueva observación en la región de Piemonte confirma la presencia de la especie en Italia (Lepidoptera: Noctuidae)**

Resumen

El presente estudio confirma la presencia de *Acronicta strigosa* ([Denis & Schiffermüller], 1775) en Italia un siglo después del último registro.
Palabras clave: Lepidoptera, Noctuidae, *Acronicta strigosa*, nuevo registro, Piamonte, Italia.

Acronicta strigosa **([Denis & Schiffermüller], 1775) - una nuova osservazione in Piemonte conferma la presenza della specie in Italia (Lepidoptera: Noctuidae)**

Riassunto

Questo studio conferma la presenza di *Acronicta strigosa* ([Denis & Schiffermüller], 1775) in Italia un secolo dopo l'ultima registrazione.
Parole chiave: Lepidoptera, Noctuidae, *Acronicta strigosa*, nuovo record, Piemonte, Italia.

Introduction

The genus *Acronicta* Ochsenheimer, 1816 includes 12 species in Italy (Parenzan & Porcelli (2006), among which the rarest one seems to be *Acronicta (Hyboma) strigosa* ([Denis & Schiffermüller], 1775) (Noctuidae, Acronictinae). This is the only species of the subgenus *Hyboma* Hübner, [1820] occurring in Europe (Fibiger et al. 2009). It is not recorded from most of southern Europe, and extinct in the British Isles since 1933, but outside Europe ranges from Transcaucasia, Caucasus, through south Siberia to Russian Far East, Korea, Japan and China (Fibiger et al. 2009). In Italy, *A. strigosa* was only rarely found in the Alps where it was recorded in Piedmont, Alto Adige, and Veneto regions (Parenzan & Porcelli, 2006). In detail, it

was found only once in Piedmont region, in Venaria near Turin, in May (Rocci, 1912), once in Alto-Adige, in Lana near Bolzano with two individuals in May and June (Dannhel, 1926), and twice in Venice (Sormani Moretti, 1881) and in Vicenza (Disconzi, 1865) provinces in Veneto region. However, all these data are very old and the presence of this species in Italy deserved confirmation.

According to Fibiger et al. (2009) the usual habitat of the species is woodland, with an abundance of *Crataegus*. In South Europe it seems to prefer wet woodlands in hilly areas (Hellmann & Parenzan, 2010). The species flies from late May to August, in northern or mountainous areas in July, and in southern areas it is bivoltine with two overlapping generations.

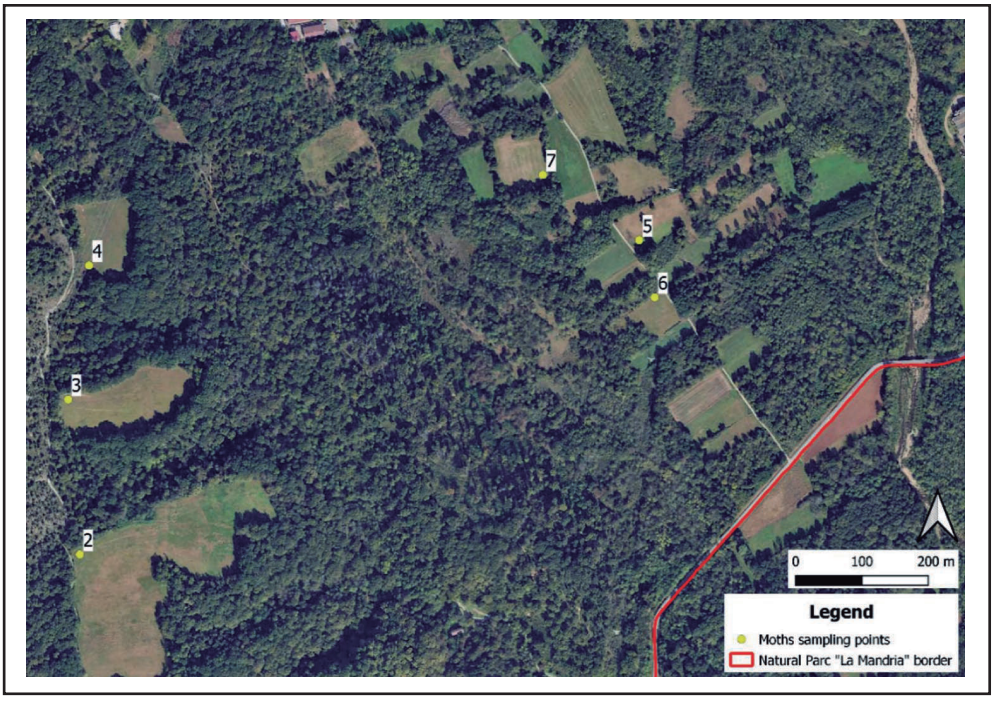
The larva is polyphagous, preferring *Crataegus*, and several Rosaceae such as *Prunus* spp., including *P. cerasus* L. and *P. domestica* L., *Sorbus*, *Pyrus* and *Malus*; the larva feeds also on various other trees of different families like *Betula*, *Ligustrum*, or *Rhamnus* (Fibiger et al. 2009).

One individual belonging to this species was surprisingly found in Piedmont during a survey aimed to evaluate the impact of anthropogenic noise on moth communities, confirming its presence in Italy after more than one century from the last observation.

Material and Methods

A Heterocera assemblage sampling was carried out in the Municipality of Varisella (383219 E, 5007126 N), in the Province of Città Metropolitana Torino, very close to the Protected Area "La Mandria" (IT1110079), in a natural area in the Piedmont region (Italy).

Figure 1. Map of the study area and sampling points..



The study area is located at 368 m a.s.l. and it is principally occupied by agriculture, with significant areas of natural vegetation according to the Corine Land Cover (Copernicus Land Monitoring Service, 2018). Natural vegetation, particularly woodlands were characterised by deciduous oaks. The traps were placed in an ecotone habitat between the woodlands and open spaces occupied by pastures. Moth assemblage was

sampled using light traps (Compact Skinner Moth Trap, actinic lamp 20 W) activated from sunset to sunrise. Six different sampling points (Figure 1) were investigated over two consecutive nights. Two replicates were carried out in July for a total of four sampling nights per point. During the survey the mean relative humidity and the minimum, maximum, and mean temperatures were recorded at each sampling point.

The specimen was photographed by Giuseppe Rijllo (Figure 2) and preserved in the Lepidoptera collection of the Wildlife Management and Forest Biodiversity Laboratory of the Research Centre for Forestry and Wood (CREA-FL), Rende, Italy.

Using GBIF.org we created a distribution map of *A. strigosa* with the aim of identifying the areas of presence for the species (occurrence download https://doi.org/10.15468/dl.gguzbe for *A. strigosa* and https://doi.org/10.15468/dl.a75hk7 for *Hyboma strigosa*, accessed via GBIF.org on 2024-09-11). The research considered the data present in the European continent, without placing any time limit, and considering only the data reporting geographical coordinates integrated with historical data for which we provided approximate coordinates. Subsequently, we divided the observations based on the time scale to highlight the differences between past and current knowledge. However, these data should be used carefully, because they are mostly based on photographs for which species identifications are sometimes very difficult.

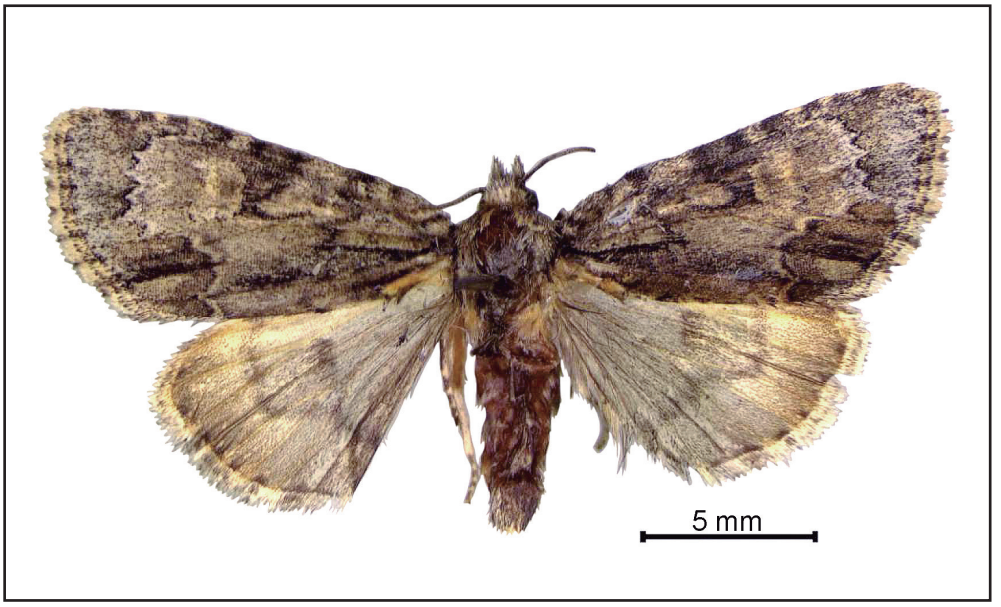
Results

Acronicta strigosa ([Denis & Schiffermüller], 1775) (Figure 2)

Material examined: 1 ♂, 22-VII-2023, Municipality of Varisella, Città Metropolitana di Torino, Italy, 367 m a.s.l., 383219 E 5007126 N (Figure 3).

Description: the specimen seems to be freshly emerged, with a wingspan of 27 mm. The pattern of wings is characteristic of this unmistakable species, which is why the integrity of the specimen was preserved and genitalia undissected.

Figure 2. *Acronicta strigosa* ♂, Varisella, 22-VII-2023. Wingspan 27 mm. Photo: Giuseppe Rijllo.

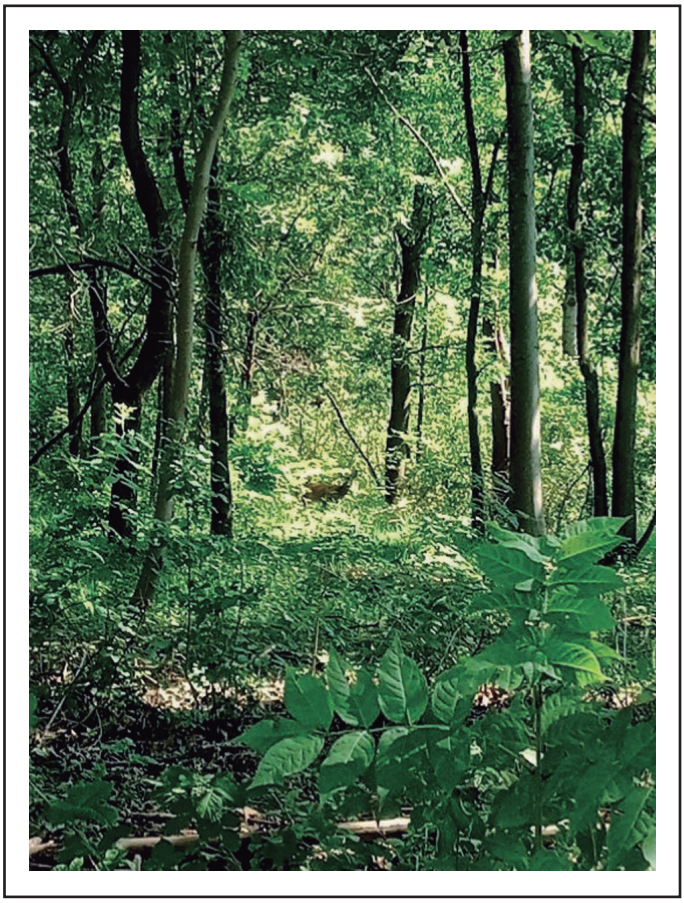


The mean relative humidity recorded during the night, when the moth was captured, was 99.92 %. The minimum temperature was 17.51ºC, the maximum was 22.02ºC, and the average throughout the night was 19.19ºC. Moreover, the night was characterised by a crescent moon (20 %).

Discussion and Conclusions

Acronicta strigosa was found in only one of the six investigated sampling sites (point code: P6) (Figure 1). The point shows different microhabitats especially in term of humidity degree. In fact, this was the only sampling point located in a humid environment (Figure 3). During spring and early summer, there are small pools of stagnant water in the ecotone zone and under the canopy. Consequently, the habitat results wetter than the other sampling points confirming the available past observations that indicate humid woodlands as the preferred habitat for this species in South Europe.

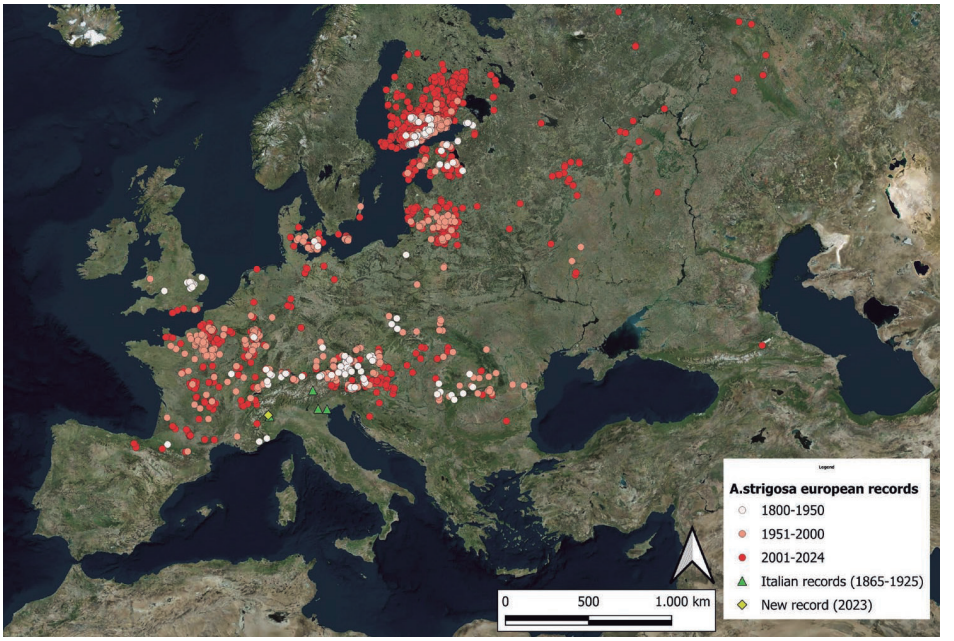
Figure 3. Sampling site of *Acronicta strigosa* in Piedmont, Varisella.



This research allowed us to report the presence of the species in this area of Piedmont (Figure 4), despite having been found in only one individual throughout the study.

The distribution of *A. strigosa* results concentrated in central and northern Europe with few records in the Mediterranean area. The knowledge of the species is still limited, particularly regarding its distribution in Italy, where the observations date back to the period 1865-1925. The distribution map shows a strong increase in the number of observations since 2000 (Figure 4), probably due to the increase in scientific research regarding nocturnal Lepidoptera and the availability of citizen science web platforms on which records should be double-checked for misidentifications.

Figure 4. European distribution of species. Map designed using QGis (vers. 3.34.11- Prizren), base layer from http://ecn.t3.tiles.virtualearth.net/tiles/a{q}.jpeg?g=1



Subsequent research in the northern part of Italy could result in newer records and could help better define the distribution and the ecology of this rare species in Italy.

Conflict of Interest

The authors declare that there is no known financial interest or personal relationship that could have influence the work presented in this article.

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