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**A first contribution to the cryptogamic flora of “Bosco Pomieri” (Northern Sicily)**

**Abstract**

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This is the first contribution to the cryptogamic flora (algae, bryophytes, fungi and lichens) of the “Bosco Pomieri”, an old-growth forest included in the Madonie Regional Park (N-Sicily). This area presents a significantly high biodiversity (41 algae, 41 bryophytes, 141 fungi, and 105 lichens) and also hosts several taxa of high biogeographic value.

*Key words*: : Biodiversity, Algae, Bryophytes, Fungi, Lichens, Old-growth forest, Sicily.

# Introduction

Old-growth forests are natural forests that have developed over a long period, without experiencing severe, stand-replacing disturbances such as fire, windstorm, or logging (UNEP/CBD/SBSTTA 2001). According to the Italian Ministry for Environment and Protection of Land and Sea, these are ecosystems in which natural dynamics create a mosaic of all the forest regeneration phases, including the senescing one. Such phase is characterized by large old trees, deadwood, and a vascular plant species composition that is consistent with the biogeographical context and includes highly specialized taxa related to the small-scale disturbance and the microhabitats resulting from structural heterogeneity (Blasi & al. 2010).

In Sicily, 472 hectares were recognized as old-growth forests mainly distributed in Regional Natural Parks, Natural Reserves, Sites of Community Importance (SCI) and Special Protected Areas (SPA). In particular, 18 forest areas, located over 1000 m of alti- tude and characterized by high index of woodiness, were surveyed in the provinces of Caltanissetta, Catania, Messina and Palermo (La Mela Veca & al. 2015).

# Material and methods

## Study area

The “Bosco Pomieri” is included in the Madonie Regional Park, Contrada Pomieri, municipality of Petralia Sottana, province of Palermo (sheet no. 610 - Castelbuono, Italian Military Geographic Institute). One of the most interesting aspects of this forest plant com- munity is its considerable size and the geographical location corresponding to the south- ernmost limit of the distribution area of durmast oak in Europe (Merlino & al. 2014).

The “Bosco Pomieri” is a mixed oak wood (Fig. 1), whose last forest uses date back to about 1950 (Bagnato & al. 2012), characterized by the presence of a number of old trees of

## Sampling and analysis

The investigation on cryptogamic flora was carried out in 2018-2020 and various habi- tat types have been considered, in accordance with the different cryptogamic components.

Periphytic algae were collected by scraping off at least five stones or cobbles (5-15 cm) randomly chosen and covered by brownish or blue-green coatings and tufts of green and red algae. The epiphytic algae were collected by squeezing bryophytes and macroalgae.

Fig. 1. *Quercus petraea* subsp. *austrothyrrenica* and *Ilex aquifolium*, charac- terizing elements of the forest of Pomieri.

Bryophyte data have been taken from the literature and in part are unedited, being the result of the determination of some specimens kept at the *Herbarium Mediterraneum Panormitanum* (PAL). The material was collected in several microhabitat within the forest, including some humid environments. The nomenclature followed is that in Söderström &

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