# Recent progress on the Flora of Milos (Kiklades, S Aegean, Greece)

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Abstract.	A work on the flora and vegetation of Milos, a small island in the southwest Kiklades, Greece is planned. Progress and a summary of results so far, are presented.
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## Introduction

The island of Milos (area 161 km<sup>2</sup>) is situated in southwest Kiklades, Greece. It forms part of the Hellenic Volcanic Arc which stretches from Aegina in the west, along Methana, Milos, Santorini, Kos and Nisiros to Bodrum in SW Anatolia in the east. The highest peaks are Profitis Ilias (750 m) and Chodro Vouno (635 m) in the southwest. Larger plains suitable for agriculture are restricted to the eastern part of the island.

The climate is characterized by semi-arid winterrain with an annual precipitation of c. 400 mm. The vegetation consists mainly of phrygana, the density of which depends on subsoil, humidity and grazing; it is typical of most Aegean islands. A large part of the island is influenced by traditional agriculture, active or abandoned. Mining has been the most important source of income on Milos since colonization. Thus the quarries together with the accompanying slag heaps have destroyed both ground and vegetation tremendously.

The exploration of the flora started early, with the French botanist Joseph Pitton de Tournefort (1656–1708) who arrived in 1700. He documented some wild and cultivated species for Milos. Later visits were carried out by Sibthorp, Bauer and Hawkins, followed by Dumont d'Urville (in 1819), Bory de Saint Vincent and L.C. Chaubard (in 1832-33), Orphanides (1856 and later), Heldreich (in 1889), Rechinger (1927), Runemark and Bentzer (1967, 2003), Kalheber (2003, 2004), Raus & Sipman (in 2011), etc.

#### Material and methods

When the first author made his first visit to Milos in March 2010 the number of taxa recorded from the



Fig. 1. Investigated sites on Milos up to 2019.

island was 627. At that time, there was no thought of preparing a Flora of Milos. Following the publication of the English and Greek editions of Flora of Samothraki in 2014, and Flora of Amorgos in 2019 and 2021, we decided to turn our attention to Milos which we selected as an example of a westernmost island in the Kiklades with an unusual geological substrate, just as Amorgos represented an eastern margin island in the Kiklades with the highest number of endemics and Samothraki, a North Aegean island with the highest mountain in the Aegean. Until 2017, a total of 808 taxa had been registered in the Flora Hellenica database. However, thirteen visits between the years 2019 and 2024 gave a rapid increase, nearly doubling this number to 1167 from the original documentation of 627 in March 2010. The new records are all published in the journal Phytologia Balcanica within

the running series '*New floristic records in the Balkans* 40–54'. Milos has been botanically explored to a great extent, mountains climbed, streams and valleys checked, gorges penetrated in an effort to document the complete flora. The number of sites investigated in progressive years is indicated in Figs. 1–3. All collections have been made within a day's walking tour. The small areas left unbotanized were because they were not easily accessible without overnight stays, or to avoid falling down precipitous sea cliffs.

#### Results

Milos belongs to the floristic region Kiklades (Kik) as circumscribed in *Flora Hellenica* (Strid &



Fig. 2. Investigated sites on Milos up to 2021.

Tan 1997) and the total number of new records we have so far found for this floristic region reaches 120. When the *Atlas of the Aegean Flora* was published (Strid 2016) we were informed that our numbers were unlikely to exceed 100 since the Aegean flora was already well documented.

More than 1160 sites with more than 22,440 plant records were noted and cartographically registered. Mapping was carried out for numerous taxa. Approximately 1320 herbarium vouchers were made. A map summarizing the natural and semi-natural vegetation together with replacement communities is in preparation.

The cryptogams — mosses and lichens, were also collected or documented by photos.

The higher basidiomycetes (mushrooms) registered were documented by photos. Two taxa were discovered as new to science: *Anthemis rigida* subsp. *runemarkii* Biel & Kit Tan (2020) and *Anthemis melia* Biel & Kit Tan (2021).

The wetland flora of Milos is surprisingly rich with its floristic composition altering every year depending on local rainfall and condensation (dew), varying from luxuriant growth to desiccation and eventual loss of species (Biel & Tan 2022).

The discovery of *Triops cancriformis* in a temporary pool in May 2022 (refound in May 2024), is significant as an indicator species of muddy vernal pools; this is a branchiopod (Notostraca) only once previously documented from Greece.

Most important for successful research on the island's flora is the cooperation of local and regional climate conditions and this is difficult to depend on or expect in the dry Kiklades for all four seasons.



Fig. 3. Investigated sites on Milos up to 2024.

The best intentions and preparations sometimes fail and results may be accidental, unexpected or even poor, unworthy of time and effort. Nevertheless, there is always another season, another year to anticipate new and interesting discoveries.

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