



Book Review: Flora of Milos

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Flora of Milos

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As a result of extensive botanical field studies conducted over the past 15 years on the island of Milos, the authors, supported by their colleagues, present the richness and character of its biodiversity: flora, vegetation, fungi, and animals. This is another joint work by the two authors on the Aegean islands of Greece, following their publications on Samothraki (2014) and Amorgos (2019).

Milos is a small Greek volcanic island, the fifth largest in the Cyclades, with an area of about 160 km². It is one of the many islands in the south Aegean Sea, located in the southwesternmost part of the Cyclades.

The structure of the book includes a Summary, Introduction, and seven chapters: 1. The island of Milos; 2. Botanical exploration; 3. The flora of Milos; 4. The vegetation of Milos; 5. Protection of vegetation and sites; 6. Species lists; 7. References.

The book offers rich up-to-date information, providing insight into the island's characteristic features: its complex geomorphology, different from that of the other islands, coastal lagoons, and hot springs caused by the ongoing volcanic activity. Although the coastline is very long, coastal habitats are generally quite uniform. Many coastal species have a wide distribution, probably due to the relatively stable climate and habitat conditions.

The island falls within the Eastern Mediterranean climatic zone, with mild winters and fairly high summer temperatures. It is considered one of the driest islands in the Cyclades. Nevertheless, the authors note the existence of numerous wet sites, when winter and spring rainfalls are profuse, as well as the presence of the only natural lake on Milos, which seldom dries up before the end of summer. Of particular interest is the wetland flora, which is surprisingly rich, and whose composition changes annually, depending on local precipitation.

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In addition to the data identified by the authors, information from other botanists who have collected or conducted field studies on Milos—mainly on mosses and lichens—is included, as well as a brief overview of the

fauna with all major representatives of classes, orders, and families, documented with color photographs.

The authors trace the history of botanical research on the island from the time of its first explorer, who arrived there in 1700, to the present day. The history and current land use are discussed, although natural conditions hinder profitable agriculture. In the past, agricultural productivity was high, but today many areas remain uncultivated, as workers prefer employment in tourism or mining, the two main livelihoods on the island.

Thirteen contemporary vegetation units have been identified for Milos, each concisely described. Their distribution and location on the island are shown on a map. Natural vegetation occurs only in areas inaccessible to sheep and goats – on steep cliffs and in deep ravines. Natural plant communities exist at various levels of degradation. A large part of the forests has been destroyed by grazing from large flocks of sheep and goats, which are widespread across the island.

In the island's open spaces, fields and mining areas, weed flora quickly invades and spreads. Most alien species occur in plant communities of nitrophilous annual weeds on uncultivated land. Some of the more aggressive alien species penetrate the natural habitats. The ruderal flora has changed significantly, compared to what was known from the first half of the 20th century, with species from *Poaceae*, *Chenopodiaceae*, and *Amaranthaceae* becoming established.

The authors note that, in general, the flora of the central Aegean Sea is poor in unique elements; however, for Milos they report 46 Greek endemics, which is remarkable, given the island's small size. Two of them are restricted exclusively to Milos. All are illustrated with photographs and distribution maps, as well as detailed descriptions, habitats, and ecological information.

The total number of vascular plant taxa recorded on the island is 1145, belonging to 1057 species, 454 genera and 112 families. These include representatives of Pteridophyta, Gymnospermae, and Angiospermae (Dicotyledonae and Monocotyledonae). The overall arrangement follows *Flora Europaea*, but families, genera, and species are listed alphabetically. For each taxon, a single herbarium voucher is cited, followed by a published reference, locality, habitat, altitude, geographical coordinates, etc. Some wider distributed taxa are featured with dot maps.

Fl. Feb to May. Common in various dry habitats, 0–225 m.

Satureja thymbra L.

SW of Pollonia, waste ground and phrygana near abandoned plant nursery, 35 m, 36°45'33"N, 24°31'06"E, 20.05.2023, *BB* 23.170.

Fl. Mar to Jun. Common in phrygana, 15–720 m.

Sideritis curvidens Stapf

SW of Ag. Kyriaki, *Calicotome*-phrygana at old mine, 105 m, 36°39'58"N, 24°29'21"E, 12.05.2022, *BB* 22.266.

Sideritis lanata L.

NW of Ag. Kiriaki, open phrygana, pasture with planted *Eucalyptus*, 35 m, 36°40'23"N, 24°29'40"E, 23.03.2023, *BB* 23.073.

Rare, only found once.

Stachys cretica L. subsp. *cretica*

NE of Zefyria, *Sarcopoterium*-phrygana with *Juniperus* on ridge, 100 m, 36°42'49"N, 24°30'31"E, 11.05.2024, *BB* 24.190.

Teucrium brevifolium Schreb.

N of Adamas, terraced phrygana slope and fallow field, 40 m, 36°43'58"N, 24°26'50"E, 18.05.2023, *BB* 23.149. Fl. Feb to May, 0–220 m.



Teucrium brevifolium

Teucrium divaricatum Heldr. subsp. *divaricatum*

WNW of Kato Komia, terraced pasture with phrygana, 155 m, 36°43'14"N, 24°31'01"E, 17.05.2022, *BB* 22.335. Fl. Apr to Jun, 5–720 m.

Teucrium polium subsp. *capitatum* (L.) Arcang. (Plate 10)

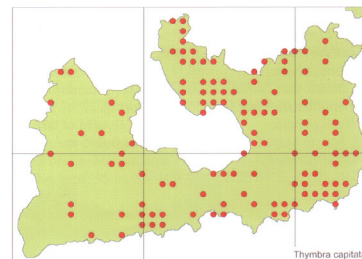
ENE of Zefyria, *Sarcopoterium*-phrygana, pasture, 250 m, 36°42'42"N, 24°32'17"E, 08.05.2024, *BB* 24.166.

Fl. Apr to Aug, 0–250 m.

Thymbra capitata (L.) Cav. (Plate 10)

Papafragas, cliffs above beach, 10 m, 36°45'N, 24°30'E, 11.05.2025, *KT&GV* 33304.

Fl. May to Aug. Dry rocky slopes, in phrygana, 0–350 m.



Thymbra capitata

Lauraceae

Laurus nobilis L.

E of Pachena, stream valley with olive groves, 6 m, 36°45'23"N, 24°30'33"E, 10.04.2024, *BB* 24.090.

Lemnaceae

Lemna minor L.

Reported by *Kalh* in Raus (2012: 221).

Linaceae

Linum bienne Mill.

Achivadolimni, rocky phrygana at northern slope of lake, 8 m, 36°41'18"N, 24°26'30"E, 07.04.2024, *BB* 24.048. Fl. Apr to Jun, 0–335 m.

Linum corymbulosum Rchb.

ENE of Paliochori, stream valley with shrub and phrygana, 40 m, 36°40'33"N, 24°31'20"E, 14.05.2024, *BB* 24.205a.

Fl. Apr to Jun, 5–335 m.

Linum strictum subsp. *spicatum* (Pers.) Nyman

N of Profitis Ilias, edge of field with stone walls, 160 m, 36°40'N, 24°22'E, 10.05.2025, *KT&GV* 33301.



Linum strictum subsp. *spicatum*

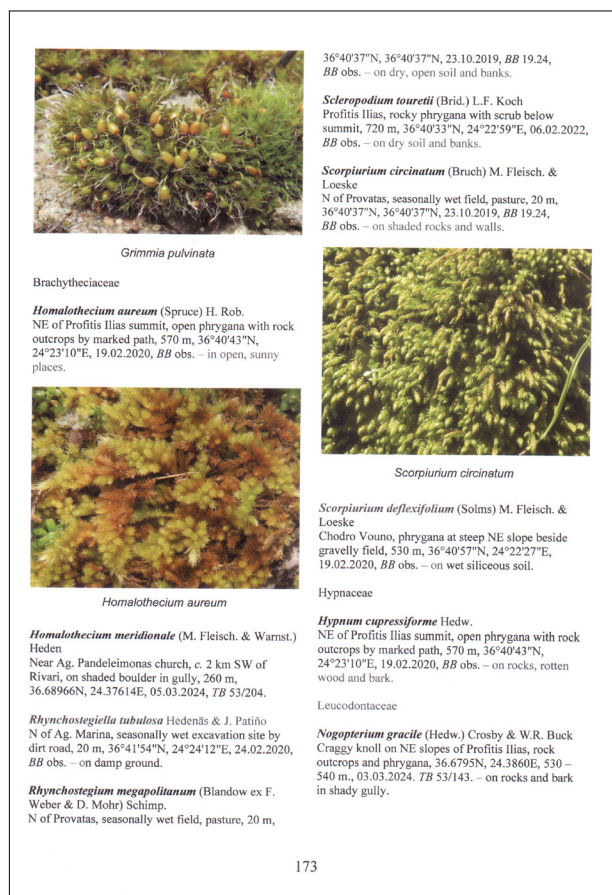
The recorded species represent more than half of the total number of species known so far from the other islands. Phytogeographical similarities between Milos and eleven other Greek islands were calculated using data from *Flora Hellenica*.

The families with the greatest number of species are *Fabaceae* (140), *Asteraceae* (132), and *Poaceae* (127). Gymnosperms are poorly represented (7 taxa). The most widespread representative is *Juniperus phoenicea* subsp. *turbinata*, which occurs at moderate altitudes, mainly near the coast. The results are presented in a highly representative figure, with many color photographs in the text, as well as 17 plates with color photographs of 153 species.

The bryophyte flora is represented by 119 species (two hornworts, 25 liverworts, and 92 mosses). For each taxon, a single collection is cited. For each citation, the locality, altitude, geographical coordinates, date of collection, and brief comments as to the preferred habitat are given.



Plate 5. – 1. *Clypeola jonthlaspi* 2. *Erysimum hayekii* 3. *Matthiola tricuspidata* 4. *Raphanus raphanistrum* 5. *Ceratonia siliqua* 6. *Legousia speculum-veneris* subsp. *pentagonia* 7. *Capparis spinosa* subsp. *aegyptia* 8. *Agrostemma githago* 9. *Cerastium pumilum* subsp. *glutinosum*



Grimmia pulvinata
Brachytheciaceae
Homalothecium aureum (Spruce) H. Rob.
NE of Profitis Ilias summit, open phrygana with rock outcrops by marked path, 570 m, 36°40'43"N, 24°23'10"E, 19.02.2020, BB obs. – in open, sunny places.
Scoriurium circinatum (Bruch) M. Fleisch. & Loeske
N of Provatas, seasonally wet field, pasture, 20 m, 36°40'37"N, 36°40'37"E, 23.10.2019, BB 19.24, BB obs. – on shaded rocks and walls.
Scoriurium deflexifolium (Solms) M. Fleisch. & Loeske
Chodro Vouno, phrygana at steep NE slope beside gravelly field, 530 m, 36°40'57"N, 24°22'27"E, 19.02.2020, BB obs. – on wet siliceous soil.
Hypnaceae
Hypnum cupressiforme Hedw.
NE of Profitis Ilias summit, open phrygana with rock outcrops by marked path, 570 m, 36°40'43"N, 24°23'10"E, 19.02.2020, BB obs. – on rocks, rotten wood and bark.
Leucodontaceae
Nogopterium gracile (Hedw.) Crosby & W.R. Buck
Craggy knoll on NE slopes of Profitis Ilias, rock outcrops and phrygana, 36.6795N, 24.3860E, 530 – 540 m., 03.03.2024, TB 53/143. – on rocks and bark in shady gully.
Rhynchostegiella tubulosa Hedenäs & J. Patiño
N of Ag. Marina, seasonally wet excavation site by dirt road, 20 m, 36°41'54"N, 24°24'12"E, 24.02.2020, BB obs. – on damp ground.
Rhynchostegium megapolitanum (Blandow ex F. Weber & D. Mohr) Schimp.
N of Provatas, seasonally wet field, pasture, 20 m,

Lichens and lichenicolous fungi are represented by 232 species, 84 of which are illustrated with color photographs.

The list of fungi includes 30 species belonging to Basidiomycota and Ascomycota. These are the first reports of this group for the territory of Milos, 19 of which are illustrated with color photographs.

Finally, a list of cited literature and an index of the Latin names of the included vascular plants, mosses, algae, lichens, and fungi are provided. Endemics are marked with a red letter (E), and the two local endemics with (EE), which greatly facilitates the reader's use of the book.

With its extensive contemporary research and synthesized information on the biodiversity of Milos, the book is of interest to specialists in flora, vegetation and biodiversity in general. With its beautiful color photographs, diagrams, and detailed data, it represents a contribution not only to Greek but also to Balkan and European floristics.

It is a valuable contribution to so far less well-known part of the Greek flora and contains the most comprehensive and significant information on the unique – and, according to the authors, surprisingly great – diversity of flora and vegetation on the relatively small island of Milos.

However, this biodiversity is threatened by serious environmental problems, such as mining and increased

tourism, the island's two main livelihoods. The authors do not remain indifferent to these serious issues; they pay close attention to them and call for conservation efforts to preserve this natural heritage for future generations, also outlining the most important preventive measures.

For their overall work and efforts, the authors deserve great respect and congratulations!

They have dedicated their work to the memory of Niki Goulandris (1925-2019), former President and Director of the Goulandris Natural History Museum – GAIA Centre for Environmental Research and Education, in recognition of her outstanding contribution in promoting environmental protection and conservation.

An entirely deserved and sincere tribute!