An inventory of lichens and lichenicolous fungi of the Greece island Zakynthos

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Abstract: In autumn of 2025 lichens and lichenicolous fungi were collected on the Ionian island Zakynthos (Greece). From the 46 identifications, 10 seems to be new records for the country. A list with distribution and substrate data is provided.

Keywords: Eastern Europe, Mediterranean area, Ascomycetes, lichen diversity.

Introduction

With an area of 406 km² Zakynthos is the third largest Ionische island, after Kefalonia and Corfu. The island is about 40 kilometre long en 20 kilometre wide, with a coastline of approximately 123 kilometre. The highest point of the island is Vrachionas, at 570 meter above sea level. Zakynthos has a subtropical mediterranean climate. In the winter months there is relatively high rainfall, but due to the favourable temperatures, the island is very green. There are many olive groves with approximately 2 million olive trees. In the summer months these are full of cicadas, which make themselves heard loud and clear during their search for a mate. Most of Olives are used to make olive oil. Here and there a fruit-bearing banana-plant can even be found. This island is very touristic with a lot of rental cars and rental buggies. Rather important is the maritime nature and especially the landscape.

A one week fieldtrip to Greece (island Zakynthos) resulted in several new records for Greece. Different habitats were visited from coastal areas to the highest spots above 500 m. Most of the collections are from *Olea* orchards, but at higher altitudes, *Pinus* and *Cupressus* trees can be found. Areas of lignum will have not be found and decorticated parts on Olive trees carry sometimes Caliciaceae. The lichen flora in not so well developed and only very distributed. Some rather interested specimens can be found, especially the micro-lichens or sometimes lichenicolous fungi. Most of this latter group are new records for the country.

About the macro-lichens, they are sparely present in many sites, but only in some cases they are abundantly present. Among them, *Parmelia sulcata*, *Parmelina tiliacea, Physcia stellaris* and *Xanthoria parietina* are most common. Micro-lichens found on several spots are *Bacidia rubella*, *Caloplaca obscurella, Diromma dirinellum*, *Lecidella elaeochroma* and *Waynea stoechadiana*, often abundantly present. Saxicolous specimens are very rarely found. Nearly everywhere, rocks lacks, but rarely lichens on old walls have been found, with only a few common species. Harrie Sipman pointed out that only 5 names were published earlier from Zakynthos, in the 19th century and more recent in 2003.

Cenomyce endiviaefolia: SIBTHORP (1813) = *Cladonia foliacea*
Lecanora villarsii: SIBTHORP (1813) = *Diploschistes ocellatus*
Byssus antiquitatis: SIBTHORP (1813) = *Lepraria antiquitatis*
Parmelia minarum: PISÚT (2003) = *Parmelinopsis minarum*
Squamarina concrescens: PISÚT (2003)

Forty six species are recorded, including ten new records for Greece, see species list. This survey contribute to the knowledge of biodiversity of the island Zakynthos.

Materials and methods

The study is based on herbarium material from the private herbarium of P. van den Boom. Finally the specimens will deposited in Belgium (BR). The occurring of the species in Greece is checked against Abbot (2009). Sampling sites were chosen with the aim of covering a maximum of diversity of habitats (listed below). Identification of some samples was carried out with keys in Canon et al. (2022); Ertz et al. (2015) and Wirth et al. I & II (2013). The external morphology of thalli and ascomata was studied under a binocular microscope. A light microscope (Olympus BH) was used for examination of apothecia, performed on hand-cut sections in water. Ascospore measurements were made in water at x 1000 to an accuracy of 0.5 µm. Only ascospores outside the ascus were measurements. Microscopic characters were observed on material mounted in water, further anatomy was examined according the standard procedures in Orange et al. (2010). Species found for the first time in Greece are marked with an asterisks. Fig. 1. Ionian island Zakynthos. Fig. 2. Presents habitus pictures of some of the more interesting species.

Fig. 1. Zakynthos with main villages, mentioned in localities below.

Localities of Ionian Island Zakynthos

1 E of the island, SE of Zakynthos town, NW of Vassilikos, area of Banana Beach, *Olea* orchard along road. 37°43,73'N, 20°58,75'E, 10 m, 4 October 2025.

2 SW of the island, N of Keri, area of graveyard and chapel, *Olea* orchard along road. 37°39,90'N, 20°48,95'E, 175 m, 5 October 2025.

3 S of the island, road from Keri to Lithakia, just south of Lithakia, *Olea* orchard along road. 37°42,72'N, 20°50,08'E, 65 m, 5 October 2025.

4 Just NW of Zakynthos town, Bohali, near castle, on old wall, vertical surface. 37°47,45'N, 20°53,50'E, 155 m, 6 October 2025.

5 East of the island, SE of Katastari, Ano Gerakari small hill with church, *Olea* orchard. 37°49,25'N, 20°48,00'E, 165 m, 6 October 2025.

6 Central part of the island, road Kiliomenos to Agios-Leon, *Pinus* trees along road, rather ruderal area. 37°46,00'N, 20°44,25'E, 445 m, 7 October 2025.

7 Central part of the island, Giri, E of village, small road (trail) in *Pinus* forest with some *Cupressus* trees. 37°48,00'N, 20°44,43'E, 555 m, 7 October 2025.

8 Central part of the island, just south of Giri, road to Louhai, *Pinus* forest with some *Cupressus* trees. 37°47,73'N, 20°44,15'E, 560 m, 7 October 2025.

9 South of the island, road between Kalamaki and Zakynthos town (halfway), *Olea* orchard. 37°45,22'N, 20°54,12'E, 30 m, 8 October 2025.

10 North of the island, road south (4 km) of Volimes, nearby petrol-station, *Olea* orchard, rich in macro lichens. 37°52,10'N, 20°39,68'E, 370 m, 9 October 2025.

11 North of the island, N of Katastari, monastery Moni loannou Prodromou, *Olea* orchard. 37°51,52'N, 20°42,12'E, 345 m, 9 October 2025.

12 Central part of the island, N of Maherado, Lagadakia, near church, group of *Cupressus*. 37°45,95'N, 20°48,47'E, 50 m, 9 October 2025.

List of substrata

Ar = *Arbutus*

Cu = *Cupressus*

Ol = *Olea*

Pn = *Pinus*

Pt = *Pistacea*

sw = stone of wall

Th = *Thuja*

Species list

Acrocordia gemmata (Ach.) A. Massal. 7 Cu

****Arthonia parietinaria*** Hafellner & A. Fleischhacker 3 Ol (on *Xanthoria parietina*)

Athallia cerinella (Nyl.) Arup, Frödén & Søchting 3 Ol

Bacidia rosella (Pers.) de Not. 11 Cu

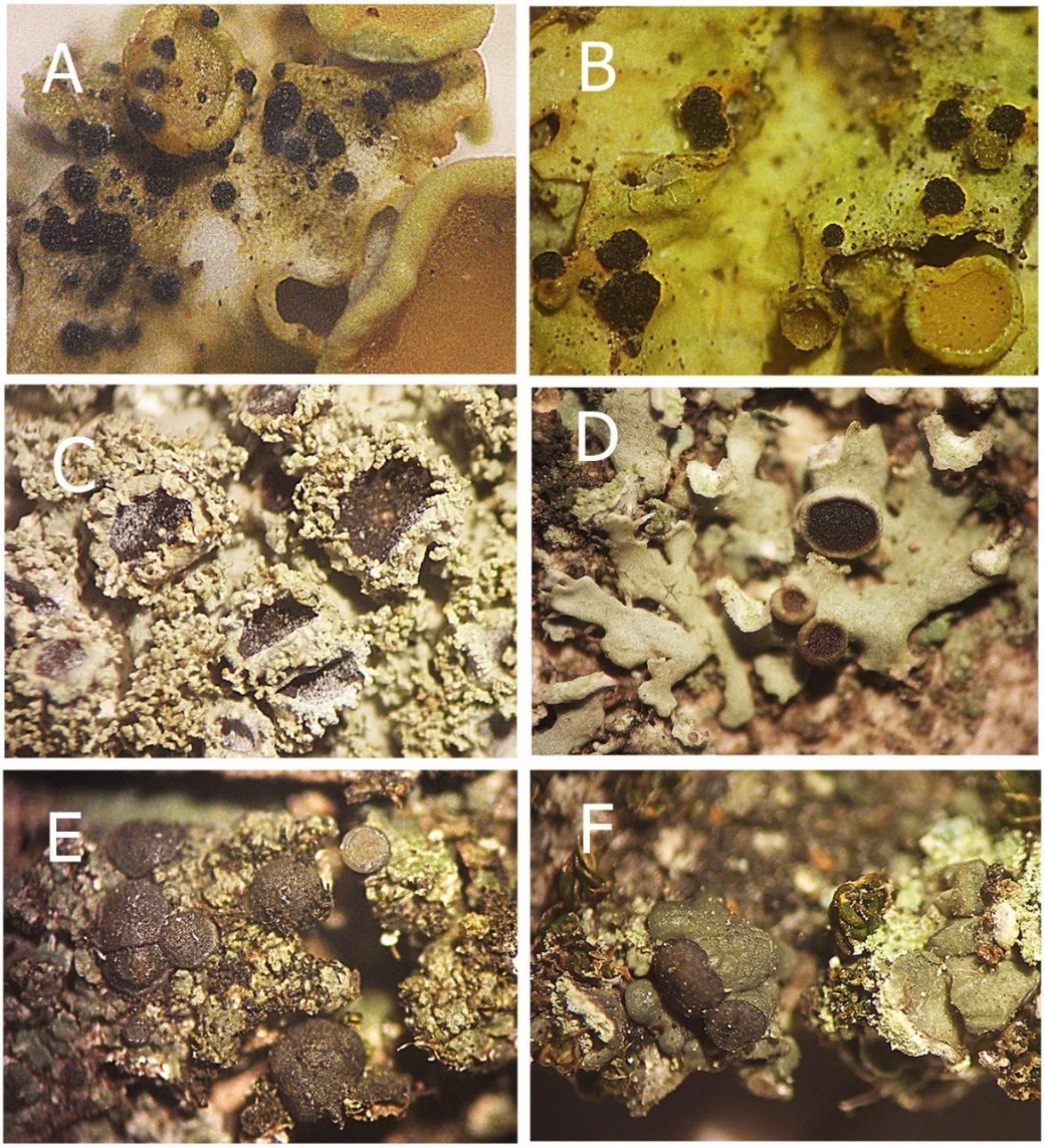

Fig. 2. Species from Zakynthos: A = *Arthonia parietinaria*; B = *Phacothecium varium*; C = *Physconia grisea* subsp. *algeriensis*; D = *Physciella chloantha*; E = *Waynea cretica*; F = *Waynea stoechadiana*.

Bacidia rubella (Hoffm.) A. Massal. 1 Ol

Bacidina phacodes (Körb.) Vězda 9 Ol

****Briancoppinsiana cytospora*** (Vouaux) Diederich, Ertz, Lawrey & van den Boom

1 Ol; 2 Ol (both on *Diromma dirinellum*)

Caloplaca cerina (Vain.) Zahlbr. 2 Ol

Caloplaca obscurella (J. Lahm) Th. Fr. 6 Pn; 11 Ol

Candelariella reflexa (Nyl.) Lettau *s.l.* 3 Ol

Catillaria nigroclavata (Nyl.) Schuler 10 Ol

****Dactylospora parasitica*** (Flörke ex Spreng.) Zopf 1 Ol (on *Ochrolechia* sp.)

Dendrographa decolorans (Turner & Borrer) Ertz & Tehler 1 Ol

****Didymocyrtis cladoniicola*** (Diederich, Kocourk. & Etayo) Ertz & Diederich 8 Pn (on *Ramalina*)

****Didymocyrtis epiphyscia*** *s.l.* 12 Cu (on *Physcia stellaris*)

****Didymocyrtis melanelixiae*** (Brackel) Diederich, Harris & Etayo 1 Ol; 2 Ol (both on *Parmelina tiliacea*)

****Didymocyrtis slaptoniensis*** (D. Hawksw.) Hafellner & Ertz 3 Ol (on *Xanthoria parietina*)

Diromma dirinellum (Nyl.) Ertz & Tehler 1 Ol

Gyalecta flotowii Körb. 7 Ar

Lecanora albellula (Nyl.) Th.Fr. 1 Ol; 9 Ol

Lecanora chlarotera Nyl. 5 Ol

Lecidella elaeochroma (Flörke) Nyl. 2 Ol; 6 Pn; 10 Th

Lichenoconium erodens M.S. Christ. & D. Hawksw. 10 Ol (on *Ramalina* sp.) 10 Ol (on *Evernia prunastri*)

Micarea prasina Fr. 7 Pn; 6 Pn (*s.l.*)

Mycocalicium subtile (Pers.) Szatala 1 Ol; 2 Ol; 9 Ol

Lepra ophthalmiza (Nyl.) Hafellner 10 Ol

****Phacothecium varium*** (Tul.) Trevis. 3 Ol (on *Xanthoria parietina*)

Phlyctis argena (Spreng.) Flot. 5 Ol

Physcia leptalea (Ach.) DC. 8 Ol

Physcia stellaris (L.) Nyl. 3 Ol; 12 Cu

Physciella chloantha (Ach.) Essl. 5 Ol (fertile)

Physconia grisea (Lam.) Poelt subsp. ***algeriensis*** (Flag.) Poelt 3 Ol; 12 Cu(fertile)

Piccolia ochrophora (Nyl.) Hafellner 1 Ol

Placolecania candicans (Dicks.) Zahlbr. 4 sw

Pleurosticta acetabulum (Neck.) Elix & Lumbsch 10 Ol

Polycoccum pulvinatum (Eitner) R. Sant. 8 Pn (on *Physcia leptalea*)

Ramalina fastigiata (Pers.) Ach. 7 Pt

Ramalina canariensis J. Steiner 1 Ol

Rinodina dalmatica Zahlbr. 1 Ol

Scutula ignarii (Nyl.) S. Ekman 9 Ol; 10 Th

Scytinium teretiusculum (Wallr.) Otálora, P.M. Jørg. & Wedin 7 Pn

****Skyttea acrocordiae*** Diederich 7 Th (on *Acrocordia gemmata*)

Telogalla olivieri (Vouaux) Nik. Hoffm. & Haffelner 4 sw (on *Xanthoria parietina*)

****Trimmatostroma acetabuli*** Diederich 10 Ol (on *Pleurosticta acetabulum*)

Waynea cretica Llop 1 Ol

Waynea stoechadiana (Abassi Maaf et Cl. Roux) Cl. Roux et Clerc 9 Ol (fertile); 12 Cu

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