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Preliminary data on lichens from Albanian Alps (Razëm locality, Northern Albania)

Original Article

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Abstract:
A list of 82 taxa of lichens collected in the Albanian Alps in two nearby localities is presented here. More than half of them (58 taxa) represent new record for the investigation area.

Key words:
Albanian Alps, biodiversity, lichens, new records

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Apstract:
Preliminarni podaci o lišajevima sa Albanskih Alpa (Razëm locality, Northern Albania)
Prikazan je spisak od 82 vrste lišajeva prikupljenih u albanskim Alpima na dva obližnja lokaliteta. Više od polovine njih (58 vrsta) predstavlja novi nalaz za područje istraživanja.

Ključne reči:
Albanski Alpi, biodiverzitet lišajevi, novi nalazi

Introduction

Studies on Albanian lichen flora have been and remained low in number. Most of these studies have been conducted by foreign authors, increasingly highlighting the need for local specialists in this field. Based on historical data, the earliest works belong to Körber (1867) and Zahlbruckner (1897), who provided information on areas now outside the borders of Albania and belonging to Montenegro, Kosovo and Northern Macedonia (Hafellner & Kashta, 2003). Data on some specimens of lichens, collected by J. B. Kümmerle in the northeastern part of the country, are published by Szatala & Timko (1926).

During his visit in 1924 and 1928, Markgraf, while studying Albanian vegetation, also collected lichens, most of which were identified by J. Hillmann and mentioned by Markgraf (1927, 1931) as part of his herbarium.

The first important work on Albanian lichen flora comes from Hafellner & Kashta (2003), which provides about 137 taxa of lichens, collected mainly in the north of the country. Hafellner (2007), summarizes a list of species reported up to that time for Albania by various authors. His list included about 191 taxa of lichens. This list has occasionally been enriched with scarce data from various authors such as: Llop et al. (2007), Mayrhofer & Sheard (2007), Hafellner (2009), Obermayer (2009), Kukwa (2011) and Hafellner & Zimmermann (2012) (Svoboda et al., 2012).

The most complete information so far on Albanian lichen flora appears to be that of Svoboda et al. (2012). Of the 43 areas visited within this study, a list of 333 lichen taxa was compiled, 205 of which reported for the first time for Albania (Svoboda et al., 2012).

Despite studies and reports to date, the lichen flora of our country, based on climatic and geological conditions, is represented by an even greater number of species. In this aspect, the paper is a contribution to the recognition and enrichment of Albanian lichen flora.

Materials and methods

Specimens were collected during field trips carried out in Kastrat, Razëm (Malësi e Madhe district). The collected specimens were initially divided by growth form and within the growth form were further grouped by the type of their fruiting bodies. Lichens were determined by standard microscopic methods (stereo and microscope) and relevant literature: Poelt (1969), Poelt & Vězda (1977, 1981), Clauzade & Roux (1985), Wirth (1995), Nimis &

Martellos (2004), Nimis & Martellos (2008), Smith et al. (2009) and Wirth et al. (2013).

The collected specimens are deposited in the author's personal herbarium.

The following provides more detailed data on two of six localities where the study was conducted. Specimens from other localities, specifically 1, 2, 3 and 6 are still being analyzed in the laboratory and identification is ongoing, so therefore they have not been included here.

Data about localities

Locality 4: Kastrat, Northern Albania, Malësia e Madhe district, c. 3 km from Razëm village, beech forest, 42°20'45"N/19°32'52"E, alt. c. 1080 m, 23.04.2018.

Locality 5: Kastrat, Northern Albania, Malësia e Madhe district, c. 1.5 km from Vila Alpini, beech forest, 42°20'24.47"N/ 19°32'43.56"E, alt. c. 1112m, 23.04.2018.

List of substrates and their abbreviations

cor: on bark (used in the case of phorophyte not identified)
cal: on limestone
ter-cal: on calcareous soil
bry: on bryophytes
Fag: on *Fagus sylvatica*

Results

Preliminary results concluded in 82 taxa which have been determined so far. 61 taxa were recorded on trees. A few stones, comprising 14 saxicolous lichens, were picked up together with common terricolous species, 21 in all. Species are arranged alphabetically. Numbers 4 and 5 correspond to the localities listed above. The abbreviations following this number correspond to the substrates listed also above. Author's initials and numbers in brackets show individual consecutive numbering systems used by the author to identify and locate individual specimens. An asterisk (*) indicates a new record for the investigation area.

List of species

Anaptychia ciliaris (L.) Körb.
4, 5 cor (SX 4021, 5001)
**Arthonia lapidicola* (Taylor) Branth & Rostr.
5 cal (SX 5003)
**Arthonia radiata* (Pers.) Ach.
4, 5 cor (SX 4002, 5004)
**Aspicilia calcarea* (L.) Mudd
5 cal (SX 5005)
**Athallia holocarpa* (Hoffmann) Arup, Frödén & Søchting
4 cor (SX 4003)
**Bagliettoa marmorea* (Scop.) Gueidan & Cl. Roux
4, 5 cal (SX 4004, 5006)
**Buellia poeltii* Schauer (Turner & Borrer ex Sm.) Almb.
4, 5 Fag (SX 4005, 5007)
**Caloplaca aurantia* (Pers.) Hellb.
5 cal (SX 5008)
Caloplaca cerina (Ehrh. ex Hedw.) Th.Fr. var. *cerina*
4, 5, cor (SX 4005, 5008)
**Caloplaca cerinelloides* (Erichsen) Poelt
4, 5 cor (SX 4006, 5010)
Caloplaca ferruginea (Huds.) Th. Fr.
4 cor (SX 4007)
**Caloplaca flavorubescens* (Huds.) J.R. Laundon
5 cor (SX 5012)
**Caloplaca haematites* (Chaub. ex St.Amans) Zwackh
5 cor (SX 5013)
Candelariella vitellina (Hoffm.) Müll. Arg.
4, 5 cor (SX 4007, 5018)
Candelariella xanthostigma (Ach.) Lettau
4, 5 cor (SX 4009, 5020)
Candelariella sp.
4 cor (SX 4010)
**Catillaria nigroclavata* (Nyl.) Schuler
4 cor (SX 4014)
**Catinaria atropurpurea* (Schaer.) Vězda & Poelt
4 Fag (SX 4015)
**Circinaria contorta* (Hoffm.) A. Nordin, S. Savic & Tibell
5 cal (SX 5022)
**Cladonia convoluta* (Lam.) P. Caut.
5 ter-cal (SX 5023)
Cladonia furcata (Huds.) Schrad.
5 ter-cal (SX 5024)
Cladonia rangiformis Hoffm.
4 ter-cal (SX 4020)
Collema subflaccidum Degel.
4 cor (SX 4025)
**Collema subnigrescens* Degel.
4, 5 cor (SX 4025, 5031)
**Collema tenax* (Sw.) Ach.
4, 5 cal (SX 4026, 5032)
**Haematomma ochroleucum* var. *ochroleucum* (Neck) J.R. Laundon
4, 5 Fag (SX 4027, 5034)
**Hypogymnia tubulosa* (Schaer.) Hav.
4 cor (SX 4028)
Lathagrium cristatum (L.) Otálora, P.M. Jørg. & Wedin
4, 5 cal (SX 4029, 5035)
**Lecania cyrtella* (Ach.) Th. Fr.
4, 5 cor (SX 4041, 5038)
**Lecania koerberiana* J. Lahm
4 cor (SX 4042)
**Lecanora allophana* Nyl.
4 cor (SX 4043)

Lecanora carpinea (L.) Vain.
4 cor (SX 4044)
**Lecanora chlarotera* Nyl.
5 cor (SX 5040)
**Lecanora coiliocarpa* (Ach.) Nyl.
4, 5 cor (SX 4045, 5041)
**Lecanora hagenii* (Ach.) Ach.
5 cor (SX 5042)
**Lecanora intumescens* (Rebent.) Rabenh.
4 Fag (SX 4046)
**Lecanora leptyrodes* (Nyl.) Degel.
5 cor (SX 5043)
**Lecanora muralis* (Schreb.) Rabenh.
5 cal (SX 5044)
**Lecanora subfuscata* f. *variolosa* (Körb.) Grummann
4, 5 cor (SX 4047, 5045)
**Lecidella elaeochroma* (Ach.) M. Choisy
5 cor (SX 5046)
Lecidella euphorea (Flörke) Hertel
4 cor (SX 4048)
**Leptogium massiliense* Nyl.
4 cal (SX 4049)
Leptogium saturninum (Dickson) Nyl.
4, 5 cor (SX 4050, 5047)
**Lobothallia radiosa* (Hoffm.) Hafellner
5 cal (SX 5048)
Melanelixia glabra (Schaer.) O.Blanco et al.
4 cor (SX 4051)
**Nephroma laevigatum* Ach.
4, 5 bry (SX 4061, 5050)
Nephroma parile (Ach.) Ach.
5 cor (SX 5051)
**Ochrolechia alboflavescens* (Wulfen) Zahlbr.
4, 5 cor (SX 4062, 5052)
**Parmelia atlantica* Ach.
4 cor (SX 4063)
**Parmelia exasperata* De Not.
5 cor (SX 5053)
Parmelina pastillifera (Harm.) Hale
5 cor (SX 5054)
**Parvoplaca* cf. *suspiciosa* (Nylander) Arup, Søchting & Frödén
4, 5 cor (SX 4064, 5055)
Pectenia atlantica (Degel.) P.M. Jørg.
4, 5 cor (SX 4065, 5056)
**Peltigera collina* (Ach.) Schrad.
4, 5 Fag (4066, 5057)
**Pertusaria albescens* var. *corallina* (Zahlbr.) J.R. Laundon
4, 5 cor (SX 4067, 5058)
**Pertusaria hymenea* (Ach.) Schaer.
4 cor (SX 4068)
Pertusaria pertusa (L.) Tuck.
4, 5 cor (SX 4069, 5059)
**Phaeophyscia ciliata* (Hoffm.) Moberg
4, 5 cor (SX 4070, 5060)
**Phaeophyscia endophoenicea* (Harm.) Moberg
4, 5 cor (SX 4071, 5061)
**Phaeophyscia orbicularis* (Neck.) Moberg
4, 5, cor (SX 4072, 5062)
**Phaeophyscia poeltii* (Frey) Clauzade & Cl. Roux
5 cor (SX 5063)
**Phlyctis argena* (Sprengel) Flotow
4, 5 cor (SX 4082, 5065)
**Physcia adscendens* (Fr.) H.Olivier
4, 5, cor (SX 4083, 5066)
Physcia aipolia (Ehrh. ex Humb.) Fürnr.
4 cor (SX 4084)
**Physcia biziana* (A.Massal.) Zahlbr.
4 cor (SX 4085)
**Physcia dubia* (Hoffm.) Lettau
5 cor (SX 5067)
**Physcia semipinnata* (J.F.Gmel.) Moberg.
4 cor (SX 4086)
**Physma omphalarioides* (Anzi) Arnold
4, 5 cor (SX 4087, 5068)
Pseudevernia furfuracea (L.) Zopf
5 cor (SX 5081)
**Ramalina farinacea* (L.) Ach.
5 cor (SX 5085)
**Ramonia luteola* Vězda
4, 5 Fag (SX 4092, 5087)
**Rinodina albana* (A. Massal.) A. Massal.
5 cor (SX 5088)
**Rinodina pyrina* (Ach.) Arnold
4, 5 cor (SX 4094, 5090)
**Rinodina sophodes* (Ach.) Massal.
4, 5 cor (SX 4095, 5091)
**Scoliciosporum umbrinum* (Ach.) Arnold
4, 5 Fag (SX 4096, 5092)
Squamarina cartilaginea (With.) P. James
5 ter-cal (SX 5100)
**Staurothele caesia* (Arnold) Arnold
5 cal (SX 5101)
**Variospora velana* (A. Massal.) Arup, Søchting & Frödén
4, 5 cal (SX 4100, 5102)
Verrucaria muralis Ach.
5 cal (SX 5103)
Verrucaria nigrescens Pers.
4, 5 cal (SX 4101, 5104)
Xanthoria parietina (L.) Th. Fr.
4, 5 cor (SX 4105, 5108)
**Xanthoria polycarpa* (Hoffm.) Rieber
4, 5 cor (SX 4106, 5109)

Discussion

The findings show many aspects. *Pectenia atlantica*, *Peltigera collina*, *Nephroma laevigatum*, *Nephroma parile*, *Leptogium saturnium*, *Lecanora intumescens*, *Ramonia luteola*, *Catinaria artropurpurea* show that the forest is primeval. The two last mentioned

species also show an alpine feature together with *Lecanora leptyrodes*, *Buellia poeltii*, *Phaeophyscia poeltii*, and *Lecanora coiliocarpa*. An oceanic feature is disclosed by *Physma omphalarioides*, *Collema subnigrescens* and *Parmelia atlantica*. Especially the habitation, but also a road through the area bring about the presence of *Physcia*, *Xanthoria* and *Rinodina* species, and *Lecanora allophana*. Everywhere in the mountain area a rather common species on deciduous trees was a *Parvoplaca* cf. *suspicosa* which is a Scandinavian species (hitherto found only in the north of Sweden). Presumably the specimens found in Razëm represent some Mediterranean alpine species. Some taxa have not been finally determined. By defining all the taxa found, a more complete interpretation of the lichen flora of this area can be made.

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