

LICHEN RECORDS FROM DOBROGEA, ROMANIA

MUSTAFA YAVUZ¹, GÜLŞAH ÇOBANOĞLU

Abstract. In this study, a list of 50 lichen taxa from Dobrogea Region of Romania is reported after a supplementary workshop and a beneficial result of Socrates Comenius Project Meeting organised by Palatul Copiilor Constanta. Two species, *Catapyrenium squamulosum* (ACH.) BREUSS and *Physconia perisidiosa* (ERICHSEN) MOBERG are new records for Romania. Forty-eight species are new records for Constanta and twenty-three species, for Tulcea provinces.

Keywords: Lichens, Constanta, Tulcea, Dobrogea, Romania.

Rezumat. Informații despre lichenii din Dobrogea, România. În acest studiu, este prezentată o listă cu 50 taxoni de licheni, întâlniți în provincia Dobrogea din România, ca rezultat al unui workshop suplimentar și al rezultatului benefic în urma întâlnirii în cadrul Proiectului Comenius Socrates, organizat la palatul Copiilor din Constanța. Două specii, *Catapyrenium squamulosum* (ARCH.) BREUSS și *Physconia perisidiosa* (ERICHSEN) MOBERG, sunt semnalate pentru prima dată în România. Patruzeci și opt specii sunt semnalate pentru prima dată pentru județul Constanța, iar douăzeci și trei specii pentru județul Tulcea.

Cuvinte cheie: licheni, Constanța, Tulcea, Dobrogea, România.

INTRODUCTION

There are a number of floristic studies on lichens of Romania. However, in the knowledge of province-level, there are still some gaps. The study area is located in Constanta and Tulcea counties from Dobrogea Region of Romania (Fig. 1). There have been 9 papers referring to lichens in Dobrogea Region (SERVIT & CRETZOIU 1936, 1937; MORUZI & MANTU, 1963; CODOREANU & CIURCHEA, 1965^a, 1965^b; MORUZI & MANTU, 1966; MORUZI et al., 1967; CODOREANU, 1969 and BARTÓK, 1988). In these papers, 117 lichen species are given from several regions of Tulcea province and there are only 3 lichen records from Constanta (MORUZI & MANTU, 1963; 1966; MORUZI et al., 1967). The present study aims to contribute to the floristic records of lichens in these two provinces and to the lichen flora of Romania.

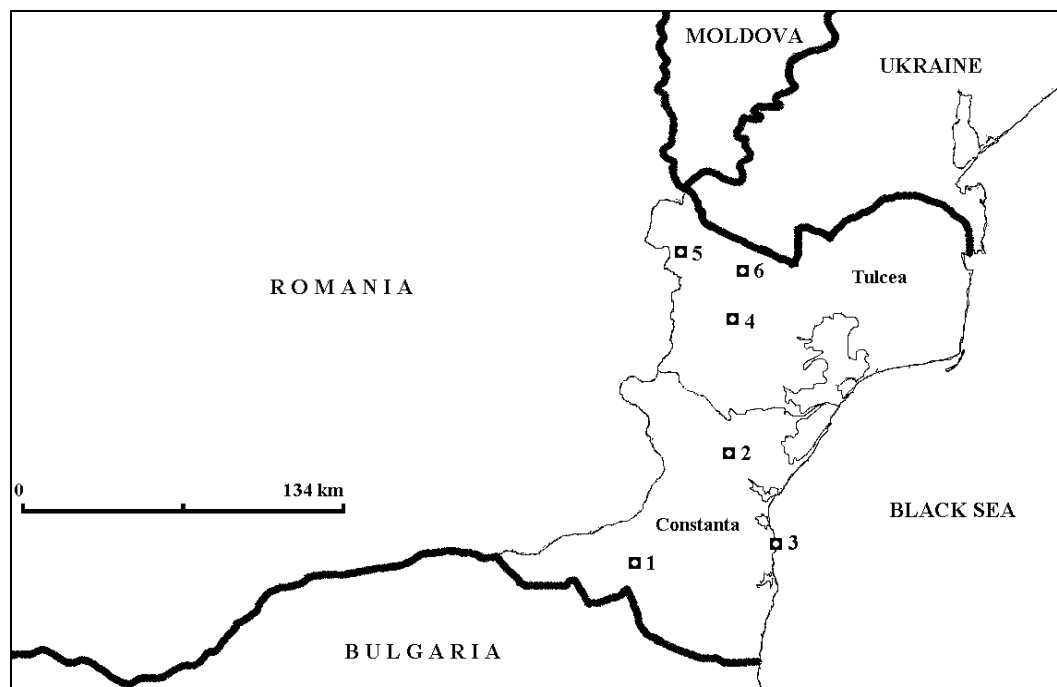


Fig. 1. Constanta, Tulcea and Romania.

Fig. 1. Constanța, Tulcea și România.

Localities of Collecting Sites:

Constanta:

1. **DB01:** Constanta, Trofeul Traiani, Adamclisi; 150 m, 44°06'07.00''N – 27°57'20.80''E, 16.V.2007.
2. **DB02:** Constanta, Cheile, Cheia; 80 m, 44°30'19.22''N – 28°25'50.80''E, 17.V.2007.
3. **DB03:** Constanta, Casino, Sea side; 2 m, 44°10'12.50''N – 28°39'47.00''E, 04.VII.2007.

Tulcea:

4. **DB04:** Tulcea, Horia; 175 m; 45°00'45.2"N – 28°26'53.1"E; 13.IV.2008.
5. **DB05:** Tulcea, Macin Mountains National Park; 130 m; 45°14'39.7"N – 28°11'42.2"E; 13.IV.2008.
6. **DB06:** Tulcea, Valea Teilor, Near Nicolitel; 270 m; 45°10'3.1"N – 28°29'20.5"E; 13.IV.2008.

According to data from Ministry of Agriculture, Food and Forests, the climatic diagram of Constanta is given in Fig. 2. The average annual mean temperature is 11.4 °C and the annual precipitation is about 385.5 mm. The drought term for Constanta is between June and October; where rest of the year is season of precipitation.

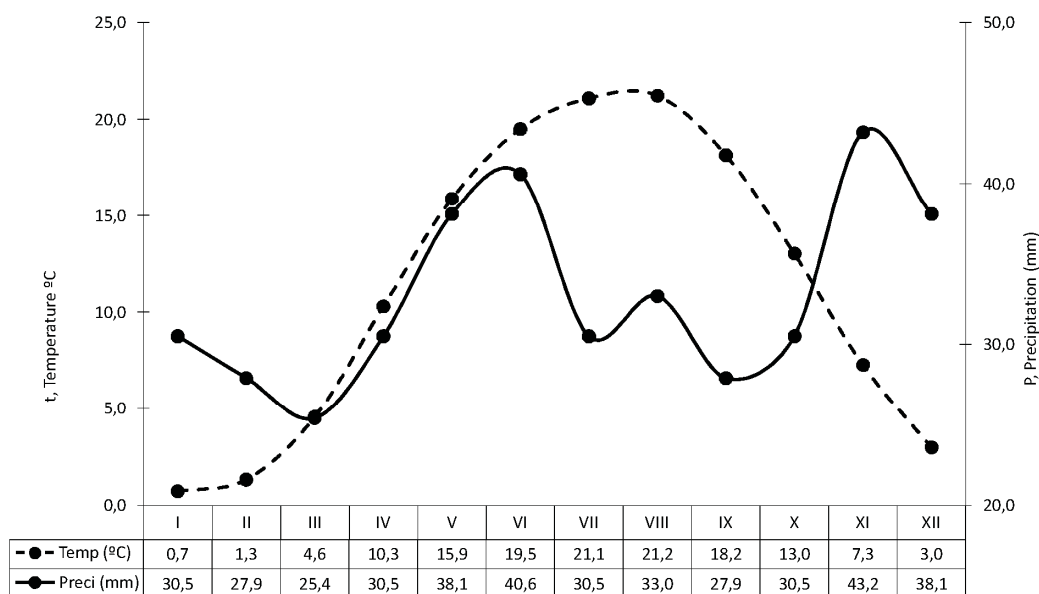


Fig. 2. Climatic Diagram of Constanta.

Fig. 2. Diagrama climatică înregistrată la Constanța.

MATERIALS AND METHODS

This study is based on lichen specimens collected during EU Socrates Comenius Project Meetings (Green Days Green Cities¹) in May, July 2007 and April 2008 where Palatul Copiilor Constanta was the hosting school. The lichen material including corticolous, saxicolous and terricolous samples was collected in six localities. Geographic coordinates and elevations were recorded as well as the substrate types. The locality information is given below. Determinations were made at least at species level by using standard identification methods with the aid of flora books (CLAUZADE & ROUX, 1985; PURVIS et al., 1992; WIRTH, 1995).

Lichen specimens are preserved in the Herbarium of Faculty of Science and Arts, University of Marmara, Istanbul (MUFE); with numbers ROMDb01 – ROMDb50. These herbarium numbers belong to a special collection *Lichenes Romania / Dobrogea* in MUFE.

RESULTS

Fifty lichen taxa are listed alphabetically. In the list, names of taxa are followed by locality and substrate information as well as the herbarium numbers.

Two species indicated with the symbol “@” are new records for Romania. Twenty-three taxa indicated with a star “*” are new records for Tulcea while twenty-five taxa indicated with a number sign “#” are new records for Constanta provinces. New records were double checked according to Ciurchea (1998 *Catalog of Lichens in Romania*. <http://www.bgbm.org> and 2007 *Lichenologic Flora of Romania*. <http://lichens.duci.ro>).

The names of authors are abbreviated according to BRUMMITT & POWELL (1992). The nomenclature follows recent literature (Santesson et al., 2004). The abbreviations used for substrate-type data in the list of taxa are given as:

CR: Calcareous Rock, **SR:** Siliceous Rock, **ST:** Soil, Terricolous

EP: Epiphytic (*Carpinus* sp., *Elaeagnus* sp., *Juglans* sp., *Platanus* sp., *Pseudacacia* sp. and *Tilia* sp.)

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List of Taxa:

1. # *Acarospora fuscata* (NYL.) ARNOLD DB05 SR, (ROMDb41).
2. # *Aspicilia calcarea* (L.) KÖRB. DB02 CR, (ROMDb01).
3. # *Aspicilia cinerea* (L.) KÖRB. DB05 SR, (ROMDb42).
4. # *Bacidia rubella* (HOFFM.) A. MASSAL. DB06 EP, on *Carpinus sp.* (ROMDb31).
5. * # *Caloplaca citrina* (HOFFM.) TH. FR. DB03 CR, (ROMDb02).
6. * # *Caloplaca lactea* (A. MASSAL.) ZAHLBR. DB02 CR, (ROMDb03).
7. # *Caloplaca saxicola* (HOFFM.) NORDIN DB03 CR, (ROMDb04).
8. # *Candelariella aurella* (HOFFM.) ZAHLBR. DB03 CR, (ROMDb06).
9. * # *Candelariella medians* (NYL.) A. L. SM DB02 CR, (ROMDb07).
10. * # *Candelariella reflexa* (NYL.) LETTAU DB04 EP, on *Platanus sp.* (ROMDb37); DB06 EP, on *Carpinus sp.*, on *Platanus sp.*
11. # *Candelariella vitellina* (HOFFM.) MÜLL. Arg. DB05 SR, (ROMDb43).
12. ® * # *Catapyrenium squamulosum* (ACH.) BREUSS DB02 CR, (ROMDb08).
13. * # *Cladonia foliacea* (HUDS.) WILLD. DB02 ST, (ROMDb09).
14. * # *Cladonia pyxidata* (L.) HOFFM. DB05 ST, (ROMDb44).
15. # *Cladonia rangiformis* (L.) WEBER ex F.H. WIGG. DB02 ST, (ROMDb10); DB05, ST.
16. * # *Collema crispum* (L.) WEBER ex F.H. WIGG. DB02 CR, (ROMDb11).
17. * # *Dirina massiliensis* DURIEU & MONT. DB02 CR, (ROMDb12).
18. # *Evernia prunastri* (L.) Ach. DB04 EP, on *Juglans sp.*, (ROMDb28); DB06 EP, on *Carpinus sp.*
19. # *Lecanora albescens* (HOFFM.) BRANTH & ROSTR. DB03 CR, (ROMDb13).
20. * # *Lecanora dispersa* (PERS.) SOMMERF. DB03 CR, (ROMDb14).
21. # *Lecidella elaeochroma* (ACH.) M. CHOISY DB04 EP, on *Juglans sp.* (ROMDb29); DB06 EP, on *Platanus sp.*
22. * # *Leproplaca xantholyta* (Nyl.) Hue (Syn: *Caloplaca xantholyta* (Nyl.) Jatta) DB03 CR, (ROMDb05).
23. * # *Melanelia exasperatula* (Nyl.) Essl. (Syn: *Parmelia exasperatula* Nyl.) DB01 EP, on *Tilia sp.* (ROMDb16); DB06 EP, on *Platanus sp.*
24. * # *Melanelia subargentifera* (Nyl.) Essl. (Syn: *Parmelia subargentifera* Nyl.) DB04 EP, on *Juglans sp.* (ROMDb32).
25. # *Parmelia sulcata* TAYLOR DB04 EP, on *Juglans sp.* (ROMDb33).
26. # *Parmelia tiliacea* (HOFFM.) HALE DB04 EP, on *Juglans sp.*, (ROMDb34); DB06 EP, on *Carpinus sp.* and on *Platanus sp.*
27. # *Peltigera rufescens* (WEISS) HUMB. DB02 CR, (ROMDb17).
28. * # *Pertusaria albescens* (HUDS.) M. CHOISY & WERNER DB06 EP, on *Carpinus sp.* (ROMDb38).
29. # *Phaeophyscia orbicularis* (NECK.) MOBERG DB01 EP, on *Pseudacacia sp.* (ROMDb18); DB04 EP, on *Juglans sp.*; DB06 EP, on *Platanus sp.*
30. * # *Physcia adscendens* (Th. Fr.) H. OLIVIER DB01 EP, on *Juglans sp.*, *Pseudacacia sp.*, *Tilia sp.* (ROMDb19); DB04 EP, on *Juglans sp.*; DB06 EP, on *Platanus sp.*
31. # *Physcia stellaris* (L.) NYL. DB01 EP, on *Elaeagnus sp.*, *Tilia sp.* (ROMDb20); DB04 EP, on *Juglans sp.*
32. * # *Physcia tribacioides* NYL. DB04 EP, on *Juglans sp.* (ROMDb35).
33. * # *Physconia distorta* (WITH.) J.R. LAUNDON DB06 EP, on *Platanus sp.*, (ROMDb39); DB06 EP, on *Carpinus sp.*
34. ® * # *Physconia perisidiosa* (ERICHSEN) MOBERG DB06 EP, on *Carpinus sp.*, (ROMDb40).
35. * # *Pleurosticta acetabulum* (NECK.) ELIX & LUMBSCH (Syn: *Parmelia acetabulum* (NECK.) DUBY) DB04 EP, on *Juglans sp.*, (ROMDb30).
36. # *Protoparmeliopsis muralis* (SCHREB.) M. CHOISY DB03 CR, (ROMDb15).
37. # *Ramalina fastigiata* (PERS.) ACH. DB04 EP, on *Juglans sp.*, (ROMDb36).
38. # *Ramalina polymorpha* (LILJ.) ACH. DB05 SR, (ROMDb47).
39. # *Rhizocarpon geographicum* (L.) DC. DB05 SR, (ROMDb48).
40. * # *Romjularia lurida* (ACH.) TIMDAL (Syn: *Psora lurida* (Ach.) DC.) DB02 CR, (ROMDb21).
41. * # *Sarcogyne regularis* KÖRB. DB02 CR, (ROMDb22).
42. # *Squamarina cartilaginea* (WITH.) P. JAMES DB02 ST, (ROMDb23).
43. * # *Toninia candida* (WEBER) TH. FR. DB02 CR, (ROMDb24).
44. * # *Umbilicaria grisea* HOFFM. DB05 SR, (ROMDb49).
45. # *Verrucaria nigrescens* PERS. DB02 CR, (ROMDb25).
46. # *Xanthoparmelia conspersa* (EHRH. ex ACH.) Hale (Syn: *Parmelia conspersa* (EHRH. ex Ach.) Ach.) DB05 SR, (ROMDb45).
47. # *Xanthoparmelia pulla* (ACH.) O. BLANCO, A. CRESPO, ELIX, D. HAWKSW. & LUMBSCH DB05 SR, (ROMDb50).
48. *Xanthoparmelia somloënsis* (GYELN.) HALE (Syn: *Parmelia somloënsis* GYELN.) DB05 SR, (ROMDb46).
49. # *Xanthoria elegans* (LINK) TH. FR. DB02 CR, (ROMDb26); DB03 CR.
50. *Xanthoria parietina* (L.) TH. FR. DB01 EP, on *Pseudacacia sp.*, *Tilia sp.*, (ROMDb27); DB04 EP, on *Juglans sp.*; DB06 EP, on *Platanus sp.*

DISCUSSION

The list includes 50 species belonging to 32 genera, of which 25 species are common for both provinces Constanta and Tulcea. The most frequent 5 genera within the study area are *Candelariella* (represented by 4 species), *Caloplaca*, *Cladonia*, *Physcia* and *Xanthoparmelia* (all are represented by 3 species).

The lichen composition is rather rich at collecting sites DB02, DB06 and DB04. Cheile (DB02, Cheia, Constanta), has the highest percentage of taxa with 15 species (30%) and a diversity on calcareous substrata. Valea Teilor (DB06, Tulcea), a forest area with many *Carpinus* sp., *Platanus* sp., and *Tilia* sp. trees, also has a large number of taxa with 13 species (26%). At Horia (DB04 Tulcea), from an agricultural plantation area of *Juglans* sp. trees 12 species (24%) were collected.

Table 1. Range of Substrate Types.
Tabelul 1. Rangel tipurilor substratelor.

	Epiphytic Taxa						Saxicolous Taxa		Terricolous Taxa	Total
	<i>Juglans</i>	<i>Platanus</i>	<i>Carpinus</i>	<i>Tilia</i>	<i>Pseudacacia</i>	<i>Elaeagnus</i>	Calcareous	Siliceous		
Number	12	8	7	4	3	1	19	9	4	50
Percentage	24	16	14	8	6	2	38	18	8	100
	36						56			

The comparison of substrates (Table 1) in species-level gives us the data of lichen diversity in Dobrogea Region. Saxicolous taxa are higher in number in all the study sites with 28 species (56%), while 19 (38%) species of which are on calcareous, and 9 (18%) species are on siliceous substrata. The number of corticolous taxa is 18 (36%) and the number of epiphytic species in comparison of substrate-sample-level is higher on *Juglans* sp.: 12 (24%); *Platanus* sp.: 8 (16%); and *Carpinus* sp.: 7 (14%); decreasing on *Tilia* sp.: 4 (8%); *Pseudacacia* sp.: 3 (6%) and *Elaeagnus* sp.: 1 (2%). Terricolous taxa are represented with 4 species (8%) of the total. *Cladonia* and *Squamarina* genera have the only terricolous species in this study.

Substrate types of all the taxa correspond with those in the literature.

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Mustafa Yavuz

Teacher of Biology, Comenius Coordinator,
Pendik Kaynarca Sevket Sabanci Lisesi Pendik 34899,
ISTANBUL – TURKEY
e-mail: mustafay007@gmail.com, mustafay007@hotmail.com

Gülşah Çobanoğlu

Assoc. Prof. Dr. University of Marmara, Faculty of Arts and Science,
Department of Biology, Göztepe Campus, 34722, ISTANBUL – TURKEY
e-mail: gulsahcobanoglu@marmara.edu.tr