



Enumeration and distribution of lichens in Surankote, District Poonch, J & K (India)

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Received: 28-09-2010

Revised: 20-10-2010

Accepted: 15-11-2010

Abstract

An enumeration of 31 species of lichens belonging to 19 genera and 13 families has been done for the first time from Surankote area of Poonch district. The crustose lichens with 20 species exhibit their dominance in the area, followed by foliose lichens represented by 11 species. *Licheinella* species is single fruticose lichen reported from the area. The saxicolous lichens with 18 species show their dominance while the species growing on bark (corticolous) are represented by 13 species.

Keywords: - Distribution, Enumeration, Lichens, corticolous, Saxicolous

Introduction

The studies related to lichens are scanty in Jammu region (Sheikh *et al.*, 2006 a, b; Sheikh *et al.*, 2009) and as such no record of lichens is available in literature from Poonch district. In the present communication attempt has been made to enumerate the lichens and also to study their altitudinal distribution from the Surankote tehsil of Poonch district of J&K state. The Surankote town (latitude 74°15'38" E, longitude 33°38'30" N and altitude 1400 m above msl) is situated on the left bank of River Suran which drain the entire valley surrounded by lofty peaks. The vegetation of the area is dominated by conifers forming pure patches and also mixed with other trees. *Cedrus deodara*, *Pinus wallinchiana*, *Picea smithiana*, *Platinus orientalis*, *Malus domestica*, *Prunus persica*, *Alnus nitida*, *Morus alba*, *Pyrus pashia*, *Quercus ilex* and *Juglans regia* etc. are the major tree species present in the study area.

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Materials and Method

The lichen collections have been made from different substratum *i.e.* rocks and trees (base to head height of the tree trunks), present in four localities - Surankote town, Bafliaz, Dehra Gali and Noori Chamb, which varies in their location, altitude and vegetation (Table I). The collection has been done for two months *i.e.* May and June 2009 and the details of locality, substratum and altitude have been recorded. The labeled and dried specimens have been lodged in the Lichen herbarium of National Botanical Research Institute, Lucknow and Department of Environmental Sciences, University of Jammu, Jammu. For authentic identification of the samples, morphology (under stereo-zoom binocular microscope), anatomy (temporary mount of free hand sections of thallus and fruiting bodies), colour spot tests of cortex and medulla with chemical reagents (potassium hydroxide, Steiner's stable paraphenylenediamine and aqueous calcium hypochlorite) and thin layer Chromatography (Walker and James, 1980) have been studied. The recent literature of Awasthi (1988, 1991 and 2000), Singh and Upreti (1984), Upreti (1988), Divakar (2001) and Nayaka (2004) has also been consulted for the identification of the specimens.

Results and Discussion

A total of 31 species belonging to 13 families have been recorded from all the sites of the Surankote area of Poonch district (Table.2). Persual of the table reveals that Family Parmeliaceae with 7 species dominate the area. *Lepraria* and *Punctelia* species have been represented in maximum number *i.e.* three each, in the study area. Further, the crustose species dominate the area with 20 species while foliose has been represented by 11 species and one lichen *i.e.* *Licheinella* species is of fruticose growth form. Sheikh *et al.* (2009) has also reported Parmeliaceae to be the dominant family and crustose to be the dominant growth

form of lichens in the J & K state. The area being rocky and mountainous, support maximum number of saxicolous types of lichens *i.e.* 18 species while the corticolous type has been represented by 14 species only which is contrary to the findings of Sheikh *et al.* (2006a). Locality wise analysis of the distribution of different lichen species (Table-3) reveals that maximum numbers of species (21 species belonging to 9 families and 15 genera) of lichens have been recorded from Dehra Gali area. The saxicolous (11 species) and corticolous (10 species) species have almost equal representation at this locality.

Table 1: Location, altitude and dominant vegetation of Collection sites

S.No	Site	Location/Altitude	Dominant vegetation
1	Surankote	Located north west to Jammu on the Jammu – Poonch road at a distance 220 Km on the left bank of the River Surn 1400 m a.s.l	<i>Pinus wallinchiana</i> , <i>Platinus orientalis</i> and <i>Malus domestica</i> etc.
2	Bafliaz	Located on left bank of the river Surn 1800 m (a.s.l)	<i>Prunus persica</i> , <i>Alnus nitida</i> , <i>Morus alba</i> , <i>Pyrus pashia</i> and <i>Prunus persica</i> etc.
3	Dehra Gali	A famous picnic spot of the region, located about 12 km. away from Surankote 3600 m a.s.l	<i>Pinus wallinchiana</i> , <i>Cedrus deodara</i> , <i>Picea smithiana</i> and <i>Juglans regia</i> etc.
4	Noori Chamb	Located 18 km. on Mughal Road from Surankote connecting Surankote to Kashmir. This area has a waterfall known as “Noori Chamb” and is famous tourist spot of the region. 2500 m. a.s.l	<i>Pinus wallinchiana</i> , <i>Cedrus deodara</i> , <i>Corylus cornuta</i> , <i>Pyrus communis</i> and <i>Aesculus indica</i> etc

The other 3 sites Surankote town, Bafliaz and Noori Chamb, have been represented by 9, 13 and 17 species of lichens, respectively. Surankote town, with good diversity of trees, exhibited poor growth of corticolous Lichens represented by two species while 7 rock inhabiting lichens grow luxuriantly in the area. All species recorded from this site have crustose growth form. Heavy anthropogenic pressure *viz.* lopping of trees for fodder and fuel wood, grazing of animals, vehicular movement *etc.* may have contributed for the poor representation of lichens at this site, particularly on the trees.

From Bafliaz locality, 13 crustose lichen species belonging to 6 families have been recorded from rocks (saxicolous). No corticolous species has

been recorded from this site as the collection has been made along the river side where trees are almost absent.

The Noori Chamb locality exhibits occurrence of 17 species of lichens belonging to 14 genera and 7 species grows on bark and 10 on rocks. At this site, 10 species of lichens exhibits crustose type growth form while other 7 species of this site show foliose type of growth.

The construction activity on the Mughal road might have affected the distribution of lichen at this locality. Further analysis of the table reveals that two genera *Lecanora muralis* and *Dermatocarpon vellerum* exhibit wide distribution and have been recorded from all the sites.

Table-2: Lichen species with their growth form and substratum

S. No.	Family	Lichen taxa	Substratum	Growth form
1.	Acarosporaceae	<i>Acarospora</i> sp	R	Cr
2.	Bacidiaceae	<i>Bacidia</i> sp.	R	Cr
3.	Chrysothriceae	<i>Chrysothrix chlorina</i> (Ach).Laundon	R	Cr
4.	Collemataceae	<i>Leptogium denitculatum</i> Nyl. <i>Leptogium burnetial</i> Dodge.	Q R	Cr Fo
5.	Hymenaliaceae	<i>Aspicilia contorta</i> (Hoffm.) Krempeh <i>Aspicilia</i> sp-2	R R	Cr Cr
6.	Lecanoraceae	<i>Lecanora campestris</i> (Schaeree). Hue <i>Lecanora muralis</i> var. <i>muralis</i> (Schreb.) Rabenh	R R	Cr Cr
7.	Lichanaceae	<i>Phylliscum indicum</i> Upreti <i>Lichinella</i> sp	R B	Cr Cr
8.	Lichens imperfecti	<i>Lepraria lobificans</i> Nyl <i>Lepraria</i> sp. I <i>Lepraria</i> sp. II	R Pp R	Cr Cr Cr
9.	Megasporaceae	<i>Aspicilia</i> sp.1	Rd	Fo
10.	Parmeliaceae	<i>Canoparmelia</i> sp. <i>Flavoparmelia caperata</i> (L.) Hale <i>Flovopunctelia flaventior</i> (Stirton) Hale <i>Punctelia borreri</i> (sm.) Krog. <i>Punctelia neutralis</i> (Hale) Krog <i>Punctelia subrudecta</i> (Nyl.) Krog. <i>Xanthoparmelia coreana</i> (Gyelin) Hale	P Rd Cd Rd P Q R	Fo Fo Fo Fo Fo Fo Cr
11.	Physeiaceae	<i>Phaeophyseia hispidula</i> (Ach.) Morberg <i>Phaeophyseia orbicularis</i> (Neck). Morberg	P P	Fo Fo
12.	Teloschistaceae	<i>Caloplaca</i> sp. <i>Caloplaca</i> sp.I <i>Xanthoria candelaria</i> (L.) Arn	R R U	Cr Cr Fo
13.	Verrucariaceae	<i>Dermatocarpon vellerum</i> Zschacke <i>Endocarpon subroseltum</i> A Singh and Upreti <i>Verrucaria acrotella</i> Ach. <i>Staurothele fissa</i> Taylor	R R R R	Cr Cr Cr Cr

Cr – Crustose
B – *Berberis* sp.

F – Foliose
Rd- *Rhododendron*

R – Rock
Cd- *Cedrus deodara*

Pp – *Pyrus pashi*
P-*Pinus wallinchaina*



Table 3: Locality wise distribution of lichens

S. No.	Lichen species	Site.I Surankote	Site.II Bafliaz	Site.III Dehra Gali	Site.IV Noori Chamb
1. 2	<i>Lecanora campestris</i> (Schaeree). Hue <i>Lecanora muralis</i> var. <i>muralis</i> (Schreb.) Rabenh	+ +	+ +	- +	+ +
3 4 5	<i>Lepraria</i> sp. II <i>Lepraria</i> sp. I <i>Lepraria lobificans</i> Nyl	+ + +	- - -	- - -	- - +
6	<i>Caloplaca</i> sp.I	+	-	-	-
7 8	<i>Dermatocarpon vellercum</i> Zschacke <i>Endocarpon subroseltum</i>	+ +	+ +	+ -	+ +
9 10	<i>Phylliscum indicum</i> Upreti Licheniella	+ -	- -	- +	- -
11 12	<i>Verrucaria acrotella</i> Ach. <i>Staurothele fissa</i> Taylor	- -	- +	+ +	+ -
13 14	<i>Aspicilia contorta</i> (Hoffm.) Krempeh <i>Aspicilia</i> sp-2	- -	- +	+ -	+ +
15	<i>Bacidia</i> sp.	-	+	-	-
16	<i>Acarospora</i> sp.	-	+	-	+
17	<i>Xanthoparmelia coreana</i> (Gyelnik) Hale	-	-	+	-
18	<i>Chrysothrix chlorine</i> (Ach).Laundon	-	-	+	+
19 20	<i>Caloplaca</i> sp. <i>Xanthoria candelaria</i> (L.) Arn	- -	+ +	- +	- +
21 22 23 24	<i>Punctelia borreri</i> (sm.) Krog. <i>Canoparmelia</i> sp. <i>Flavoparmelia caperata</i> (L.) Hale <i>Punctelia subrudecta</i> (Nyl.) Krog.	- - - -	- - + -	+ + + +	+ + + -
25	<i>Aspicilia</i> sp.1	-	-	+	+
26	<i>Leptogium denitculatum</i> Nyl.	-	+	+	-
27	<i>Phaeophyseia orbicularis</i> (Neck). Morberg	-	-	+	+
28	<i>Leptogium burnetia</i> Dodge.	-	-	+	-
29 30 31	<i>Flovopunctelia flaventior</i> (Stirton) Hale <i>Punctelia neutralis</i> (Hale) Krog <i>Falvoparmelia caperata</i> (L.) Hale	- - -	- - +	+ + +	+ - -
32	<i>Phaeophyseia hispidula</i> (Ach.) Moberg	-	-	+	-

+ = Present

- = Absent



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