

Lichen diversity in Jammu and Kashmir, India

*Mukhtar Ahmad Sheikh, **Dalip Kumar Upreti & *Anil Kumar Raina

**Department of Environmental Sciences, University of Jammu, Jammu-180006.*

** *National Botanical Research Institute, Lucknow-226 001*

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The present status of lichen diversity in the state of Jammu and Kashmir is provided. The state is represented by the occurrence of 279 species belonging to 79 genera and 33 families of lichens so far known from Jammu and Kashmir, based on the published literature and identified lichen specimens preserved at herbarium of National Botanical Research Institute (LWG), Lucknow.

Key-words—Lichen diversity, Jammu & Kashmir, India

INTRODUCTION

The state of Jammu and Kashmir covers an area of 2,22,236 sq km. The entire state lies between 32° 17' and 36° 58' north latitudes and 73° 26' and 80° 30' east longitudes. Geographically the state is divided into four zones. The mountainous and semi-mountainous plain commonly known as Kandi belt, in south the hills including Shiwalik ranges, the mountains of Kashmir valley and the Pir Panjal range in the northwest and in east the Tibetan tract of Ladakh and Kargil.

The climate in the state varies from tropical to alpine, the annual precipitation ranges from 107-650 mm, with an average of 600 mm of snow fall during winter. The temperature fluctuation during summer is 15°C to 43°C and in winter (-) 3°C to 26°C.

The forests are spread over 22,236 sq km, which accounts for 20% of the total geographical area of the state. Over 19,236 sq km is under coniferous soft wood (Pine) and 946 sq km under non-coniferous soft wood. The varied altitude and climate provide a variation in vegetation of the state. The thorny bushes of the arid plains contrast with the alpine flora of the higher altitudes. Trees include Maple, Horse chestnuts, Silver fir, Birch, Rhododendron, Berberis and a large number of herbal plants in the higher altitudes. The most magnificent of the Kashmir tree is the gigantically sized Chinar found throughout the valley. Mountain range in Kashmir show dense growth of coniferous trees of Deodar, Pine and Fir. Walnut, Willow, Almond,

Poplar, Kail and Mulberry trees also grow luxuriantly in the state.

Jammu and Kashmir is one of the lichen rich region of the Himalayas, often called the 'Hot Spot' of lichen diversity in India. Lichen exploration in the state initiated more exhaustively in fifties of the last century, when Raghubir (1949) surveyed and collected lichens from the Anantnag district from Achabal and Pahalgam areas but did not publish. Since 1949, uptill now more than 30 collection trips for collection of lichens were performed by the different workers in the state (Table 1, Map 1).

MATERIAL AND METHOD

The study is based on the lichen specimens belonging to Herbarium of Lucknow University, Lucknow (LWU); Personal lichen collection of Dr. D.D. Awasthi (AWAS) and Lichen Herbarium of National Botanical Research Institute, Lucknow (LWG). All the above herbarium specimens are lodged in LWG.

All the lichen specimens belonging to the state of Jammu and Kashmir were segregated from the herbarium. The distribution, altitude, substratum and growth form of each lichen taxa was listed together with details of locality, name of the collector and year of collection.

The lichen taxa mentioned in different revisionary, floristic and monographic studies of Indian lichens are also included in the enumeration (Table 3).

Table 1. Lichen exploration in Jammu & Kashmir

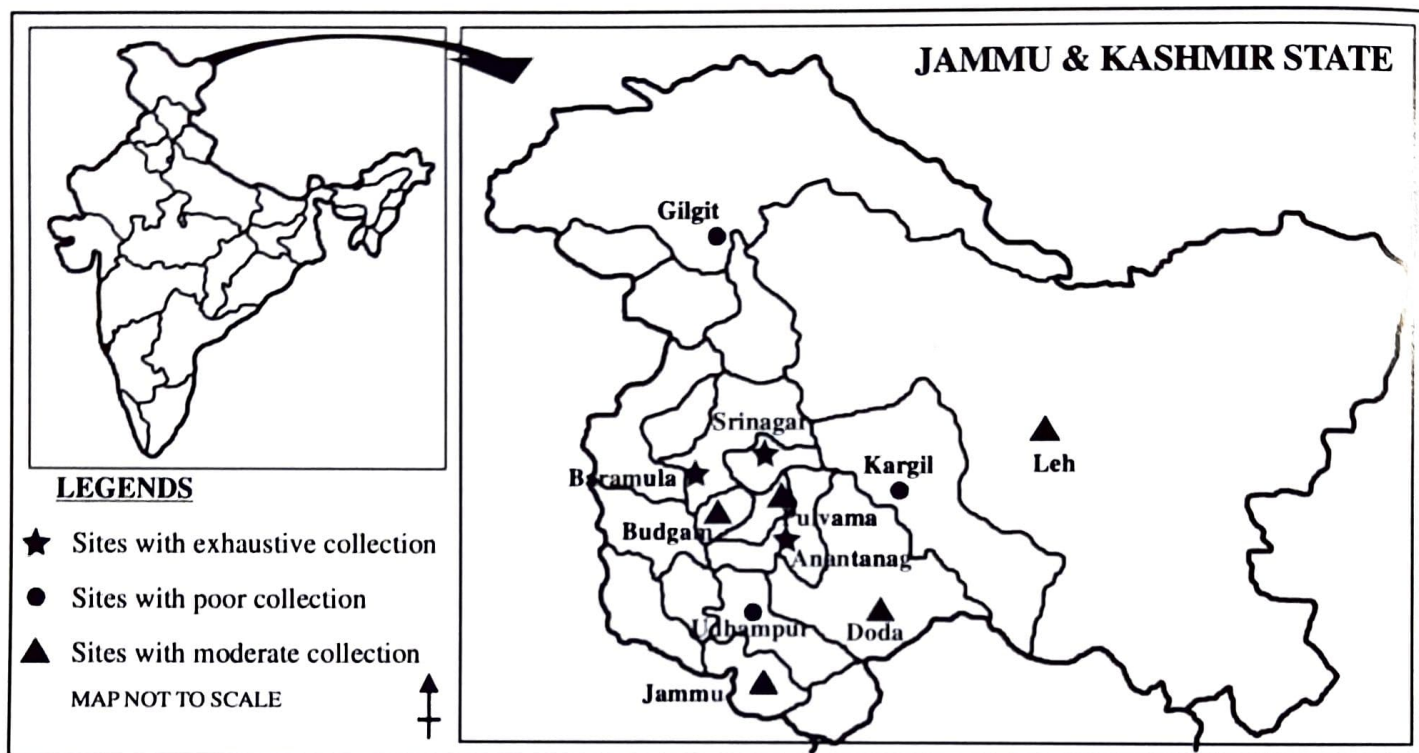
S. No.	Name of Collector	Year	Locality
1.	H.C. Raghubir	1949	I. Achabal; Anantnag district. II. Pahalgam; Anantnag district.
2.	K.N. Kaul	1952	Kangan; Srinagar district.
3.	D.D. Awasthi	1953	I. Pahalgam; Anantnag district. II. Kukernag; Anantnag district III. Shankaracharya Hill; Srinagar district.
4.	O.A. Höeg	1953	Gulmarg; Baramulla district.
5.	K.N. Kaul	1953	I. Baba Rishi; Baramulla district. II. Ferozpur, Tangmarg; Baramulla district. III. Khilanmarg, Gulmarg; Baramulla district. IV. Pahalgam; Anantnag district.
6.	K.N. Kaul	1954	I. Baba Rishi; Baramulla district. II. Gulmarg; Baramulla district. III. Achabal; Anantnag district. IV. Shankaracharya Hill; Srinagar district. V. Banihal; Doda district.
7.	T.R. Seshadri	1954	I. Yarikah Pine Forest, Gulmarg; Baramulla district. II. Pahalgam; Anantnag district. III. Kashmir (Locality not mentioned)
8.	R.N. Chopra	1954	Kashmir (Locality not mentioned)
9.	L.D. Kapoor	1955	Yarikah Pine Forest, Gulmarg; Baramulla district.
10.	K.N. Kaul	1955	Pahalgam; Anantnag district.
11.	G. Saran	1956	Kistwar; Doda district.
12.	K.N. Kaul	1958	Khilanmarg, Gulmarg; Baramulla district.
13.	B.K. Kaul	1958	I. Tangmarg; Baramulla district. II. Gulmarg; Baramulla district. III. Shankaracharya Hill; Srinagar district. IV. Ganderbal, Srinagar district. V. Zaberwan; Srinagar district.
14.	K.N. Kaul	1959	Baba Rishi; Baramulla district.
15.	G.C. Rath	1960	I. Shankaracharya Hill; Srinagar district. II. Drang Forest, Tangmarg; Baramulla district. III. Khilanmarg, Gulmarg; Baramulla district. IV. Kashmir (Locality not mentioned).
16.	D.M. Vean	1960	Gilgit, Kashmir.
17.	R. Gosh	1963	I. Verinag; Anantnag district. II. Awantipora; Pulwama district.
18.	P. Chandra	1963	Verinag; Anantnag district.
19.	G.S. Srivastava	1965	I. Pahalgam; Anantnag district. II. Kashmir (Locality not mentioned).

20.	D.D. Awasthi	1968	I. Pahalgam; Anantnag district. II. Sonamarg; Srinagar district. III. Khilanmarg, Gulmarg; Baramulla district
21.	P.N. Mujoo	1970	I. Achabal; Anantnag district. II. Pahalgam; Anantnag district III. Kukernag; Anantnag district IV. Khilanmarg, Gulmarg; Baramulla district V. Kashmir (Locality not mentioned). VI. Shankaracharya Hill; Srinagar district. VII. Harwan Garden; Srinagar district. VII. Prang Garden; Srinagar district.
22.	K. Dange	1977	I. Pahalgam; Anantnag district II. Khilanmarg, Gulmarg; Baramulla district III. Harwan Garden; Srinagar district. IV. Shalimar Garden; Srinagar district. V. Tangmarg; Baramulla district. VI. Nandni hill; Jammu district.
23.	A. Singh and M. Ranjan	1979	Kargil district.
24.	G. Saran	NA	I. Achabal; Anantnag district II. Baltal, Pahalgam; Anantnag district
25.	B.N. Bhattacharya	NA	Neh Nar Glacier; Anantnag district.
26.	P.D. Dogra	NA	Sonamarg; Srinagar district
27.	D.K. Upreti	1982	I. Kangan; Srinagar district. I. Pahalgam; Anantnag district III. Gulmarg; Baramulla district
28.	A. Singh & D.K. Upreti	1982	I. Baltal, Pahalgam; Anantnag district. II. Kangan; Srinagar district. III. Khilanmarg, Gulmarg; Baramulla district IV. Mamal Village, Pahalgam; Anantnag district. V. Pahalgam; Anantnag district.
29.	H.R. Negi	1999	Hemis National Park; Leh district.
30.	D.K. Upreti & S. Chatterjee	2003	Ladak; Leh district.
31.	H.C. Dutt	2003	Chinya Valley, Ramtund Forest area, Kaplash, Badarwah; Doda district.
32.	M.A. Sheikh	2004	I. Pingalgam; Pulwama district. II. Goosu; Pulwama district. III. Yusmarg; Budgam district.
33.	M.A. Sheikh & A.K. Raina	2004	I. Jammu University Campus; Jammu district. II. Mansar Lake; Jammu district.

Awasthi (1965) indicated that the lichens of North Western Himalayan region including Jammu and Kashmir show affinity with lichens of Europe, Arid regions of Central and Western Asia, Arid regions of rocky mountain of north America and Peru in South America. A large number of Himalayan lichens are

common to that of Arctic, Antarctic and Alpine regions of world.

Awasthi and K. Singh (1970) published a note on lichens of Jammu and Kashmir. Out of the total 43 lichen species, *Verrucaria aethiobola* Wahl. ex Ach., *Calicium abietinum* Pres., *Catillaria atropurpurea*



Map of Jammu and Kashmir state showing different districts from where lichen collection has been reported

(Schaer.) Th Fr., *Stereocaulon condensatum* Hoffm., *Peltigera praetextata* (Flörke) Zopf., *Pertusaria globulifera* (Turn.) Mass. var *discoidea* (Pers.) Almb., *Parmelia glabra* Nyl., *Parmelia glabratula* (Lamy.) Nyl., and *Parmelia ulophyllodes* (Vainio.) Sav., were new records for the Indian lichen flora.

Awasthi (1988,1991) in the key of macrolichens and microlichens from India listed 19 macrolichens and 42 microlichens respectively. Negi and Upreti (2000) while conducting the ecological studies in the Hemis National Park in Ladak area regarding the species diversity and relative abundance of lichens mentioned the occurrence of 18 species from Ladak.

DISCUSSION

Based on identified lichen specimens preserved in herbarium of National Botanical Research Institute (LWG) and lichen taxa mentioned in published literature, a total of 279 species belonging to 79 genera and 33 families of lichens are recorded from the state of Jammu and Kashmir (Table 2).

Out of the 14 districts of the state the Anantnag district exhibits the maximum diversity of lichens

represented by 105 species. The Pahalgam, Achabal, Kukernag and Verinag area of the district were explored exhaustively for collection of lichens in the past.

Baramulla, and Srinagar districts are represented by the occurrence of 70 and 57 species of lichens. In Srinagar district, Shankaracharya hills and Sonamarg area and in Baramulla district, Gulmarg, Khalinmarg, Babarashi and Tangmarg area are also explored exhaustively for collection of lichens in the past.

The areas of Leh, Pulwama, Jammu, Doda and Budgam districts are moderately explored for lichens represented by the occurrence of 34, 22, 20, 19 and 12 species of lichens respectively.

Gilgit, Kargil, and Udhampur districts are poorly explored for lichens as records of only 7, 5, and 1 species are available from these districts respectively.

It is clear from this study that out of 14 districts of Jammu and Kashmir absolutely no collection or records of lichens from 4 (Kathua, Rajouri, Poonch and Kupwara) districts are available.

Table 2 : Distribution of lichens in different localities, their altitude, substratum and growth forms

S. No.	LICHEN TAXA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	ALTITUDE	SUBSTRATUM	GROWTH FORM
1	<i>Acarospora bullata</i> (Nyl.) Anzi	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3800 m	S	CR
2	<i>Acarospora praeurumptorium</i> H.Magn.	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	1600 m	S	CR
3	<i>Acarospora strigata</i> (Nyl.) Jatta	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3400 m	S	CR
4	<i>Anaptychia ciliaris</i> (L.) Körb.	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	1650 - 2700 m	Co	FR
5	<i>Anaptychia kaspica</i> Gyeln.	-	-	-	-	+	+	+	+	-	-	-	-	-	-	-	-	1650 - 3200 m	Co	FR
6	<i>Anaptychia pseudoroemerii</i> Awasthi	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2200 m	Co	FR
7	<i>Aspicilia alphoplaca</i> (Walhenb. In Ach.) Poelt & Leuck.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2250 - 3360 m	S	CR
8	<i>Aspicilia caesiocinerea</i> (Nyl. ex Malbr.) Arnold	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	2560 - 2750 m	S	CR
9	<i>Aspicilia calcarea</i> (L.) Mudd.	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	2400 - 4300 m	S	CR
10	<i>Aspicilia cinereorufescens</i> (Ach.) Massal.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	S	CR
11	<i>Aspicilia contorta</i> (Hoffm) Krempelh.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3400 m	S	CR
12	<i>Aspicilia griseocinerea</i> Räsänen	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	2250 m	S	CR
13	<i>Aspicilia hartilana</i> Hue	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	2400 m	S	CR
14	<i>Aspicilia praeardiosa</i> (Nyl.) Poelt & Leuckert.	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	1800 - 2760 m	S	CR
15	<i>Aspicilia radiosa</i> (Hoffm.) Poelt & Leuck.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	S	CR
16	<i>Aspicilia</i> sp.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	3900 m	Ca,S	CR
17	<i>Bacidia phacodes</i> Körber	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	Co,S	CR
18	<i>Bacidia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2500 m	Co	CR
19	<i>Buellia betulinoidea</i> Schubert & Klement	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	2100 m	Co	CR
20	<i>Buellia curtisii</i> (Tuck.) Imsh. in Brodo	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2560 - 2650 m	Co	CR
21	<i>Buellia montana</i> H.Magn.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	1800 m	Co	CR
22	<i>Buellia polyspora</i> (Willey IN Tuck.) Vainio	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	3200 m	Co	CR
23	<i>Buellia punctata</i> (Hoffm.) Mass	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2550 m	Co	CR
24	<i>Calicium glaucellum</i> Ach.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2250 m	Co	CR
25	<i>Caloplaca biatorina</i> (Massal.) Steiner	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	Co,S,M	CR
26	<i>Caloplaca brebissonii</i> (Fée) Zahlbr.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	Co,S,M	CR
27	<i>Caloplaca cerina</i> var. <i>muscorum</i> (A.Massal.) Jatta	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	1800 m	M	CR
28	<i>Caloplaca cerina</i> var. <i>stillicidiorum</i> (Vahl.) Th. Fr.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	1800 m	M	CR
29	<i>Caloplaca cerinelloides</i> (Erichsen) Poelt in Degel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2700 m	Co	CR
30	<i>Caloplaca cirrhochroa</i> (Ach.) Th.Fr.	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	Ca	CR
31	<i>Caloplaca citrina</i> (Hoffm.) Th.Fr.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	S,M,Co	CR

S. No.	LICHEN TAXA	GROWTH FORM																SUBSTRATUM	ALTITUDE	GROWTH FORM
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
32	<i>Caloplaca diphryodes</i> (Nyl.) Jatta	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	S,,M,Co	CR	
33	<i>Caloplaca elegans</i> (Link.) Th. Fr.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	S	CR	
34	<i>Caloplaca haematites</i> (Chaub.) Zwack.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	S,,M,Co	CR	
35	<i>Caloplaca holocarpa</i> (Hoffm.) Wade	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	1584	Co,S,M	CR	
36	<i>Caloplaca insularis</i> Poelt	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4700 m	S	CR	
37	<i>Caloplaca malaensis</i> (Räsänen) Awasthi	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	305 - 665 m	Co	CR	
38	<i>Caloplaca pyracea</i> (Ach.) Th. Fr.	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	1650 m	Co	CR	
39	<i>Caloplaca sp. 1</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	1584 m	Co	CR	
40	<i>Caloplaca sp. 2</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	1584 m	Co	CR	
41	<i>Caloplaca sp. 3</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	1584 m	S	CR	
42	<i>Candelaria concolor</i> (Dicks.) B Stein.	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	1584 - 2280 m	Co	FO	
43	<i>Candelariella grammae</i> Poelt & Reddi	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4000 m	Co	CR	
44	<i>Candelariella sp.</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	2100 - 2400 m	Co	CR	
45	<i>Candelariella vittellina</i> (Hoffm.) Müll. Arg.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3400 m	S	CR	
46	<i>Candelariella aurella</i> (Hoffm.) Zahlbr.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	T	CR	
47	<i>Canoparmelia texana</i> (Tuck.) Elix & Hale	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	S	FO	
48	<i>Carbonea vitellinaria</i> (Nyl.) Hertel	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NA	NA	CR	
49	<i>Catapyrenium sp.</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	1800 m	T	CR	
50	<i>Catillaria erysiboides</i> (Nyl.) Th. Fr.	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2400 m	Co	CR	
51	<i>Catillaria pulvereae</i> (Borrer) Lettau	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	665 m	Co	CR	
52	<i>Cetraria potaninii</i> Oxner	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4600 m	S	FO	
53	<i>Cetrelia braunsiana</i> (Müll. Arg.) Club & Club.	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	2200 m	Co	FO	
54	<i>Cetrelia cetrarioides</i> (Deise ex Duby) Club. & Club.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	1500 - 2438 m	Co	FO	
55	<i>Chrysothrix candelaris</i> (L.) Laundon	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	2800 m	Co	L	
56	<i>Chrysothrix chlorina</i> (Ach.) Laundon	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	665 m	Co	L	
57	<i>Chrysothrix sp. 1</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	2100 m	Co	L	
58	<i>Chrysothrix sp. 2</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	2100 m	Co	L	
59	<i>Chrysothrix sp. 3</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	2700 m	Co	L	
60	<i>Cladonia awasthiana</i> Ahti & Upreti	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	2100 - 2750 m	Co,T	FR	
61	<i>Cladonia cartilaginea</i> Müll. Arg.	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	2200 - 2500 m	Co	FR	
62	<i>Cladonia chlorophaea</i> (Flörke in Sommerf.) Spreng	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	2560 - 2750 m	Co	FR	

S. No.	LICHEN TAXA	GROWTH FORM																SUBSTRATUM	ALTITUDE	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
63	<i>Cladonia coniocraea</i> (Flörke) Spreng	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 - 2760 m	FR
64	<i>Cladonia corniculata</i> Ahti & Kashi.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	Co	2134 - 2438 m	FR
65	<i>Cladonia fimbriata</i> (L.) Fr.	-	-	-	+	+	+	-	+	-	-	-	-	-	-	-	-	Co, T, M, S	2100 - 2800 m	FR
67	<i>Cladonia ochrochlora</i> Flörke	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	Co, T	2250 - 2400 m	FR
68	<i>Cladonia pocillum</i> (Ach.) Grognot.	+	+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	T, M	2100 - 4700 m	FR
69	<i>Cladonia pyxidata</i> (L.) Hoffm.	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	S, M, T	1650 - 2700 m	FR
70	<i>Cladonia rei</i> Schaer.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	2250 - 2700 m	FR
71	<i>Cladonia</i> sp.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	2200 m	FR
72	<i>Collema flaccidum</i> (Ach.) Ach.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	2400 m	CR
73	<i>Collema limosum</i> (Ach.) Ach.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	T	NA	FO
74	<i>Collema polycarpon</i> Hoffm.	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	S	1500 m	CR
75	<i>Collema rugosum</i> Krempelh.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	Co	2700 m	CR
76	<i>Collema subflaccidum</i> Degel.	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	Co	1650 - 2800 m	CR
77	<i>Coniocybe</i> sp.	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	Co	1950 - 2700 m	FO
78	<i>Dermatocarpon meiohyllizum</i> Vainio	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	Co	305 m	CR
79	<i>Dermatocarpon miniatum</i> (L.) Mann.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	4300 m	SQ
80	<i>D. miniatum</i> var. <i>meuselianum</i> (Scht. & Klem.) Awasthi & Upreti	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	S	1800 m	SQ
81	<i>Dermatocarpon miniatum</i> var. <i>papillosum</i> Müll. Arg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	NA	SQ
82	<i>Dermatocarpon moulinii</i> (Mont.) Zahlbr.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	S	1800 - 2400 m	SQ
83	<i>Dermatocarpon velleureum</i> Zschacke	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	S	1800 - 2700 m	SQ
84	<i>Diploschistes actinostomus</i> (Pers. in Ach.) Zahlbr.	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	S	1620 - 3600 m	SQ
85	<i>Diploschistes candidissimus</i> (Krempelh.) Zahlbr.	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	S	1800 m	CR
86	<i>Diploschistes scruposus</i> (Schreb.) Norman.	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	S	1800 m	CR
87	<i>Diplotomma alboatrior</i> (Nyl.) Szat. ex Awasthi & S. Singh	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	S	2134 - 2438 m	CR
88	<i>Diplotomma sorediatum</i> (Tuck.) S. Singh & Awasthi	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	Co	2700 m	CR
89	<i>Endocarpon subrosetum</i> A. Singh & Upreti	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	2250 m	CR
90	<i>Evernia divaricata</i> (L.) Ach.	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	Ca, S	305 - 2700 m	SQ
91	<i>Evernia prunastri</i> (L.) Ach.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	Co	2100 - 3300 m	FR
92	<i>Everniastrum cirrhatum</i> (Fr.) Hale	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	2200 m	FR
93	<i>Flavoparmelia caperata</i> (L.) Hale	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	NA	FO
94	<i>Flavopunctelia flaventior</i> (Stirton) Hale	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	Co	1800 - 2460 m	FO

S. No.	LICHEN TAXA	ALTITUDE																SUBSTRATUM	GROWTH FORM	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
95	<i>Flavopunctelia soledica</i> (Nyl.) Hale	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	1950 - 2400 m	Co	FO
96	<i>Heterodermia diademata</i> (Taylor) Awasthi	-	-	+	+	-	-	-	-	+	-	-	-	-	-	-	-	1500 - 2700 m	Co	FO
97	<i>Heterodermia incana</i> (Stirton) Awasthi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1584 m	Co	FO
98	<i>Heterodermia indica</i> (H.Magn. in Awasthi) Awasthi	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	Co	FO
99	<i>Heterodermia leucomela</i> ssp. boryi (Fée) Swinsc. & Krog.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2100 - 2750 m	Co	FO
100	<i>Heterodermia speciosa</i> (Wulfen) Trevisan	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 m	Co	FO
104	<i>Hyperphyscia adglutinata</i> (Flörke) Mayrh. & Poelt	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	305 - 1600 m	Co	FO
102	<i>Hypogymnia physodes</i> (L.) Nyl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2250 - 2400 m	Co	FO
103	<i>Hypogymnia vittata</i> (Awasthi) Awasthi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2200 m	Co	FO
104	<i>Lecania fuscella</i> (Schaerer) Körber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1584 m	Co	CR
105	<i>Lecanora albescens</i> (Hoffm.) Branth & Rostr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S, Co	CR
106	<i>Lecanora campestris</i> (Schaerer) Hue.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4000 - 4700 m	S	CR
107	<i>Lecanora campestris</i> ssp. glumargia Upreti	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2560 - 2820 m	S	CR
108	<i>Lecanora carpinea</i> (L.) Vainio	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2550 m	Co	CR
109	<i>Lecanora chlarotera</i> Nyl.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	1950 - 2550 m	Co	CR
110	<i>Lecanora cinereofusa</i> H.Magn.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2440 - 2700 m	Co	CR
111	<i>Lecanora dispersa</i> (Pers.) Sommerf.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S	CR
112	<i>Lecanora flavidofusa</i> Müll.Arg.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2100 m	Co	CR
113	<i>Lecanora flavidomarginata</i> B. de Lesd.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2000 m	Co	CR
114	<i>Lecanora frustulosa</i> (Dickson) Ach.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2700 - 4700 m	S	CR
115	<i>Lecanora garovagii</i> (Körber) Zahlbr	+	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	1600 - 5000 m	S	CR
116	<i>Lecanora helmichiana</i> Poelt	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S	CR
117	<i>Lecanora himalayae</i> Poelt	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	1800 - 4300 m	T, M	CR
118	<i>Lecanora indica</i> Zahlbr.	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4500 m	S	CR
119	<i>Lecanora insignis</i> Degel. Ach.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	2700 m	Co	CR
120	<i>Lecanora intricata</i> (Schrad.) Ach.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S	CR
121	<i>Lecanora intumescens</i> (Rabenh.) Rabenh.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA	CR
122	<i>Lecanora kirra</i> Poelt & Grube	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4600 - 4800 m	S	CR
123	<i>Lecanora meridionalis</i> H.Magn.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1620 m	Co	CR
124	<i>Lecanora muralis</i> var. dubyi Müll. Arg.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4600 m	S	CR
125	<i>Lecanora muralis</i> var. muralis (schreber) Rabenh.	+	+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	1500 - 4900 m	S	CR

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
157	<i>Melanelia disjuncta</i> (Erichs.) Essl.	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S,Co	FO
158	<i>Melanelia elegantula</i> (Zahlbr.) Essl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2100 - 2700 m	Co	FO
159	<i>Melanelia glabra</i> (Schaer) Essl.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	2100 - 2800 m	Co	FO
160	<i>Melanelia glabratula</i> (Lamy.) Essl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 - 2250 m	S	FO
161	<i>Melanelia infumata</i> (Nyl.) Essl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	NA	Co	FO
162	<i>Melanelia subargentifera</i> (Nyl.) Essl.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	2100 - 2800 m	Co	FO
163	<i>Melanelia villosella</i> (Essl.) Essl.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	2400 - 2550 m	Co	FO
164	<i>Melaspilea gemella</i> (Eschw.) Nyl.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	NA	Folicolous	CR
165	<i>Menegazzia perusa</i> (Schränk.) Stein.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2400 m	Co	FO
166	<i>Mycobilimbia</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1584 m	Co	CR
167	<i>Neofuscelia verruculifera</i> (Nyl.) Essl.	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S	FO
168	<i>Nephroma expallidum</i> (Nyl.) Nyl.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA	FO
169	<i>Nephroma parile</i> (Ach.) Ach.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	Co	FO
170	<i>Ochrolechia rosella</i> (Müll.Arg.) Vers.	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	2100 - 2400 m	Co	CR
171	<i>Ochrolechia pallescens</i> (L.) Massal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1650 - 2700 m	Co	CR
172	<i>Opegrapha dimidiata</i> Müll. Arg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	Co	CR
173	<i>Parmotrema direagens</i> (Hale) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	Co	FO
174	<i>Parmelia hypoclysta</i> (Nyl.) em. Klem.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	Co	FO
175	<i>Parmelia scortea</i> (Ach.) Ach.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	1650 - 2700 m	S	FO
176	<i>Parmelia sulcata</i> Taylor	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	1800 - 2650 m	Co	FO
177	<i>Parmelina tiliaceae</i> (Hoffm.) Hale	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	2100 - 2800 m	Co	FO
178	<i>Parmotrema austro-sinense</i> (Zahlbr.) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	Co	FO
179	<i>Parmotrema cristiferum</i> (Taylor) Hale	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2240 m	Co	FO
180	<i>Parmotrema habaianum</i> (Gyelnk.) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA	FO
181	<i>Parmotrema nilgherrense</i> (Nyl.) Hale	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 - 3200 m	Co	FO
182	<i>Parmotrema tinctorum</i> (Nyl.) Hale	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	Co	FO
183	<i>Peltigera canina</i> (L.) Willd.	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	1800 - 2800 m	S,M,T	FO
184	<i>Peltigera dolichorrhiza</i> Nyl.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	1650 - 2700 m	T	FO
185	<i>Peltigera horizontalis</i> (Huds.) Baumg.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	2134 - 2750 m	T,M,S	FO
186	<i>Peltigera microphylla</i> (Anders) Gyel.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	Co,S,M	FO
187	<i>Peltigera polydactyla</i> (Neck.) Hoffm.	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	2100 - 3300 m	S	FO

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
188	<i>Peltigera polydactyla</i> (Neck.) Hoffm. var. <i>pruinosa</i> Gyel.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2260 - 3300 m	T	FO
189	<i>Peltigera praetextata</i> (Flörke) Vain.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2800 m	Co,M	FO
190	<i>Peltigera rufescens</i> (Weis.) Humb.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 - 2800 m	Co,T,M	FO
191	<i>Peltula euploca</i> (Ach.) Poelt ex Pisut	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	S	CR
192	<i>Peltula patellata</i> (Bagl.) Swinsc. & Krog.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	305 m	Ca	CR
193	<i>Pertusaria albescens</i> (Huds.) Chaisy & Wern.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2100 - 2700 m	Co	CR
194	<i>Pertusaria quassiae</i> (Fée) Nyl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	665 m	Co	CR
195	<i>Phaeophyscia kairamoi</i> (Vainio) Moberg.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	Co	FO
196	<i>Phaeophyscia constipata</i> (Nortl. in Nyl.) Moberg.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3600 m	S	FO
197	<i>Phaeophyscia endococcina</i> (Körb) Moberg.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2700 m	S	FO
198	<i>Phaeophyscia hirsuta</i> (Mereschk.) Moberg.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	NA	Co	FO
199	<i>Phaeophyscia hispidula</i> (Ach.) Essl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1584 - 2400 m	Co	FO
200	<i>Phaeophyscia hispidula</i> (Ach.) Essl. var. <i>lambata</i> Poelt	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	Co	FO
201	<i>Phaeophyscia hispidula</i> ssp. <i>pruinosa</i> (Poelt) Trass.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2250 m	Co	FO
202	<i>Phaeophyscia nepatensis</i> (Poelt) Awasthi	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1584 m	Co	FO
203	<i>Phaeophyscia nigricans</i> (Flörke) Moberg.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2438 m	S	FO
204	<i>Phaeophyscia orbicularis</i> (Necker) Moberg.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	305 - 1584 m	Co	FO
205	<i>Phaeophyscia</i> sp. 1	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2100 m	Co	FO
206	<i>Phaeophyscia</i> sp. 2	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 m	T	FO
207	<i>Phyllocladon abuense</i> Awasthi & S. Singh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305 m	Ca	CR
208	<i>Phyllocladon indicum</i> Upreti	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305 m	Ca	CR
209	<i>Phyllopsora</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	315 m	Co	FO
210	<i>Physcia aipolia</i> (Ehrh. in Humb.) Funer.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1500 - 2800 m	Co	FO
211	<i>Physcia caesia</i> (Hoffm.) Funer.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2700 m	Co	FO
212	<i>Physcia dubia</i> (Hoffm.) Lett. emend. Lyng.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	305 m	Co	FO
213	<i>Phaeophyscia endococcina</i> (Körb.) Moberg. var. <i>latiloba</i> H. Magn.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1580 m	Co	FO
214	<i>Physcia leptalea</i> (Ach.) DC	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1500 - 2400 m	Co	FO
215	<i>Physcia stellaris</i> (L.) Nyl.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1590 - 2440 m	Co	FO
216	<i>Physconia deterosa</i> (Nyl.) Poelt	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2800 m	Co	FO
217	<i>Physconia enteroxantha</i> (Nyl.) Poelt	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2700 m	Co	FO
218	<i>Physconia grisea</i> (Lam.) Poelt	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 - 2800 m	Co	FO
219	<i>Physconia muscigena</i> (Ach.) Poelt	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 - 2438 m	T,M	FO
220	<i>Physconia perisidiosa</i> (Erich.) Moberg.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2700 m	S	FO
221	<i>Physconia pulverulenta</i> (Hoffm.) Poelt	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1550 - 2250 m	S,Co	FO
222	<i>Physconia pulverulenta</i> var. <i>argyphaea</i> (Ach.) Awasthi	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1580 - 2800 m	Co,T	FO
223	<i>Physlopsia adglutinata</i> (Flörke) Choisy	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2250 m	S	FO
224	<i>Porina glabra</i> Zahlbr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	S	CR
225	<i>Porpidia crustulata</i> (Ach.) Hertel & Knoph in Hertel.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2560 - 2800 m	S	CR
226	<i>Porpidia macrocarpa</i> (DC) Hertel & Schwab in Hertel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2560 - 2750 m	S	CR
227	<i>Pseudevernia furfuracea</i> (L.) Zopf.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1650 - 2700 m	Co	FR
228	<i>Punctelia borrieri</i> (Sm.) Krog.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	1800 m	Co	FO
229	<i>Punctelia rudecta</i> (Nyl.) Krog.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2100 m	Co	FO
230	<i>Punctelia subrudecta</i> (Nyl.) Krog.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	2134 - 2400 m	Co	FO

S. No.	LICHEN TAXA	ALTITUDE																SUBSTRATUM	GROWTH FORM	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
231	<i>Pyxine patricola</i> Nyl. in Crombie.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	Co	665 m	FO
232	<i>Pyxine subcinerea</i> Stirton	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	Co	665 m	FO
233	<i>Ramalina baltica</i> Lett.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 - 2750 m	FR
234	<i>Ramalina confusa</i> Awasthi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 m	FR
235	<i>Ramalina obtusata</i> (Arn.) Bitt.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	NA	FR
236	<i>Ramalina pollinaria</i> (Westr.) Ach.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2134 - 2800 m	FR
237	<i>Ramalina sinensis</i> Jatta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2000 m	FO
238	<i>Ramalina conduplicans</i> Vainio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	1500 - 2700 m	FR
239	<i>Rhizocarpon sublucidum</i> Räsänen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 m	FR
240	<i>Rhizocarpon linei</i> (Tomab.) Rune.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	1650 - 2700 m	CR
241	<i>Rhizoplaca chrysoleuca</i> (Smith.) Zopf.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	2700 m	CR
242	<i>R. melanophthalma</i> (Ram. in Lam. & DC) Leuck. & Poelt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	2250 - 5000 m	FO
243	<i>Rimelia reticulata</i> (Taylor) Hale & Fletcher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	3600 - 5000 m	FO
244	<i>Rinodina badiella</i> (Nyl.) Th. Fr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	3600 m	CR
245	<i>Rinodina</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2700 m	CR
246	<i>Rinodina turfacea</i> (Wahlenb.) Körber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	3600 - 5100 m	CR
247	<i>Sarcogyne privigna</i> (Ach.) Anzi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	2560 - 2800 m	SQ
248	<i>Solorina bispora</i> Nyl.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	3600 - 3900 m	FO
249	<i>Squammarina cortilaginea</i> (with.) P. James	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	1580 m	SQ
250	<i>Stereocaulon glareosum</i> (Savicz.) H. Magn.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	2100 m	FR
251	<i>Tephromela atra</i> (Hud.) Hafellner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	4000 m	CR
252	<i>Toninia coeruleo-nigricans</i> (Lightf.) Th. Fr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T, M	1800 m	CR
253	<i>Umbilicaria jingralensis</i> Nagark & Patw.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	NA	FO
254	<i>Umbilicaria virginis</i> Schaerer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	4300 m	FO
255	<i>Usnea comosa</i> (Ach.) Röhl.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2134 - 2438 m	FR
256	<i>Usnea longissima</i> Ach.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2200 m	FR
257	<i>Usnea perplexans</i> Stirton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 - 2700 m	FR
258	<i>Usnea</i> sp. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2200 m	FR
259	<i>Usnea</i> sp. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2200 m	FR
260	<i>Usnea subfloridana</i> Stirton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2200 m	FR
261	<i>Verrucaria aethiobola</i> Wahlenb. in Ach.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	3300 m	CR
262	<i>Xanthoparmelia australasica</i> D. Galloway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	1800 m	FO
263	<i>Xanthoparmelia conspersa</i> (Ach.) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	1800 m	FO
264	<i>Xanthoparmelia coreana</i> (Gylen.) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	2400 - 2800 m	FO
265	<i>Xanthoparmelia somloensis</i> (Gylen.) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	4000 m	FO
266	<i>Xanthoparmelia taractica</i> (Kremp.) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co, T, S	1620 - 2700 m	FO
267	<i>Xanthoparmelia tinctina</i> (Mahe. & Gill) Hale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T, S	2100 m	FO
268	<i>Xanthoria candelaria</i> (L.) Th. Fr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	3800 - 4300 m	FO
269	<i>Xanthoria elegans</i> (Link.) Th. Fr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	1584 - 2800 m	FO
270	<i>X. fallax</i> (Hepp.) Arnold var. <i>subsoresidiata</i> (Räs.) Awasthi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	1600 - 5000 m	FO
271	<i>Xanthoria fulva</i> (Hoffm.) Poelt & Petutsching	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	1560 - 2750 m	FO
272	<i>Xanthoria parietina</i> (L.) Th. Fr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2700 m	FO
273	<i>Xanthoria polycarpa</i> (Ehrh.) Rieber.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co, S, M	1500 - 2400 m	FO
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 m	FO

S. No.	LICHEN TAXA	GROWTH FORM																SUBSTRATUM	ALTITUDE	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
274	<i>Xanthoria sorodiata</i> (Vainio) Poelt	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	3900 m	FO
275	<i>Xanthoria</i> sp.1	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	S	1584 m	FO
276	<i>Xanthoria</i> sp.2	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	Co	1584 m	FO
277	<i>Xanthoria substellaris</i> var. <i>suboredivosa</i> Räsänen	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	Co	1650 - 2700 m	FO
278	<i>Xanthoria ulophylloides</i> Räsänen var. <i>suboredivosa</i> Räsänen	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	Co	2100 - 2550 m	FO
279	<i>Xylographa abietina</i> (Pers.) Zahlbr.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	NA	NA	CR
TOTAL		34	5	7	105	57	63	19	22	12	70	20	0	1	0	0	0			

Abbreviations:

- Co=Corticicolous,
- M = Muscicolous,
- S = Saxicolous,
- T = Terricolous,
- Ca = Calcicolous,
- NA = Not Available

Lichen Forms

- CR = Crustose,
- FO = Foliose,
- FR = Fruticose,
- SQ = Squamulose,
- L = Leprose

Localities

1 = Leh district, 2 = Kargil district, 3 = Gilgit, 4 = Anantnag district, 5 = Srinagar district, 6 = Kashmir (Locality not mentioned), 7 = Doda district, 8 = Pulwama district, 9 = Budgam district, 10 = Baramulla district, 11 = Jammu district, 12 = Kathua district, 13 = Udhampur district, 14 = Rajouri district, 15 = Poonch district and 16 = Kupwara district.

S. No.	Lichen Taxa	Species	References
7	<i>Leptogium</i>	<i>L. burnetiae</i> var. <i>cfr. hirsutum</i> (Sierk.) Jorg <i>L. saturninum</i> (Dicks.) Nyl.	Awasthi and Akhtar (1977) Awasthi and Akhtar (1977)
8	<i>Collema</i>	<i>C. flaccidum</i> (Ach.) Ach. <i>C. subflaccidum</i> Degel.	Akhtar and Awasthi (1980) Akhtar and Awasthi (1980)
9	<i>Buellia</i>	<i>B. betulinooides</i> Schubert & Klement <i>B. punctata</i> (Hoffm.) Massal.	S. Singh and Awasthi (1981) S. Singh and Awasthi (1981)
10	<i>Peltigera</i>	<i>P. canina</i> (L.) Willd. <i>P. horizontalis</i> (Huds.) Baumg. <i>P. microphylla</i> (Anders.) Gyeln. <i>P. polydactyla</i> var. <i>polydactyla</i> (Neck.) Hoffm <i>P. polydactyla</i> var. <i>pruinosa</i> Gyeln. <i>P. praetextata</i> (Florke in Sommrrf.) Zopf. <i>P. rufescens</i> (Weis.) Humb	Awasthi and Joshi (1982) Awasthi and Joshi (1982) Awasthi and Joshi (1982) Awasthi and Joshi (1982) Awasthi and Joshi (1982) Awasthi and Joshi (1982)
11	<i>Dermatocarpon</i>	<i>D. miniatum</i> (L.) Mann. <i>D. miniatum</i> var. <i>meuselianum</i> (Schbt. & Klem.) <i>D. miniatum</i> var. <i>papillosum</i> Müll.Arg. <i>D. vellereum</i> Zschacke	Awasthi and Upreti (1985) Awasthi and Upreti (1985) Awasthi and Upreti (1985) Awasthi and Upreti (1985)
12	<i>Usnea</i>	<i>U. perplexans</i> Stirton <i>U. subflorida</i> Stirton	Awasthi,G (1986) Awasthi,G (1986)
13	<i>Xanthoria</i>	<i>X. candelaria</i> (L.) Arn. <i>X. elegans</i> (Link.) Th. Fr. <i>X. parietina</i> (L.) Fr. <i>X. fallax</i> (Hepp.) Arnold	Awasthi (1986) Awasthi (1986) Awasthi (1986) Awasthi (1986)
14	<i>Ochrolechia</i>	<i>O. rosella</i> (Müll. Arg.) Vers.	Awasthi and Tewari (1987)
15	<i>Catillaria</i>	<i>C. erysiboides</i> (Nyl.) Th. Fr.	G. Awasthi and Awasthi (1989)
16	<i>Diplotomma</i>	<i>D. solediatum</i> (Tuck.) Singh,S. & Awasthi	Singh, S and Awasthi (1990)
17	<i>Melanelia</i>	<i>Melanelia acetabulum</i> (Neck.) Essl. <i>M. infumata</i> (Nyl.) Essl. <i>Melanelia disjuncta</i> (Erich.) Essl. <i>M. elegantula</i> (Zahlbr.) Essl. <i>M. glabra</i> (Schaer.) Essl. <i>M. glabratula</i> (Lamy.) Essl. <i>M. subargentifera</i> (Nyl.) Essl. <i>M. subaurifera</i> (Nyl.) Essl. <i>M. villosella</i> (Essl.) Essl.	Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001) Divakar (2001)
18	<i>Neofuscelia</i>	<i>Neofuscelia verruculifrea</i> (Nyl.) Essl.	Divakar (2001)
19	<i>Everniastrum</i>	<i>Everniastrum cirrhatum</i> (F.Fries) Hale ex Sipman	Divakar (2001)
20	<i>Flavoparmelia</i>	<i>Flavoparmelia caperata</i> (L.) Hale	Divakar (2001)
21	<i>Flavopunctelia</i>	<i>Flavopunctelia flaventior</i> (Stirton) Hale <i>Flavopunctelia soledica</i> (Nyl.) Hale	Divakar (2001) Divakar (2001)
22	<i>Parmelia</i>	<i>P. sulcata</i> Taylor	Divakar (2001)
23	<i>Parmelina</i>	<i>P. tiliaceae</i> (Hoffm.) Hale	Divakar (2001)

24	<i>Parmotrema</i>	<i>P. austrosinense</i> (Zahlbr.) Hale	Divakar (2001)
		<i>P. nilgherrense</i> (Nyl.) Hale	Divakar (2001)
24	<i>Punctelia</i>	<i>P. borreri</i> (Sm.) Krog	Divakar (2001)
		<i>P. rudecta</i> (Ach.) Krog	Divakar (2001)
		<i>P. subrudecta</i> (Nyl.) Krog	Divakar (2001)
25	<i>Xanthoparmelia</i>	<i>X. australasica</i> D. Galloway	Divakar (2001)
		<i>X. conspersa</i> (Ach.) Hale	Divakar (2001)
		<i>X. somloensis</i> (Gyelink) Hale	Divakar (2001)
26	<i>Aspicilia</i>	<i>A. caesiocinera</i> (Nyl. ex Malbr.) Arnold	Upreti and Chatterjee (2002)
		<i>A. calcarea</i> (L.) Summerf.	Upreti and Chatterjee (2002)
26	<i>Aspicilia</i>	<i>A. caesiocinera</i> (Nyl. ex Malbr.) Arnold	Upreti and Chatterjee (2002)
		<i>A. calcarea</i> (L.) Summerf.	Upreti and Chatterjee (2002)
		<i>A. griseocinerea</i> Räsänen	Upreti and Chatterjee (2002)
		<i>A. praeradiosa</i> (Nyl.) Poelt & Leuck.	Upreti and Chatterjee (2002)
		<i>Aspicila</i> sp.	Upreti and Chatterjee (2002)
27	<i>Ramalina</i>	<i>R. obtusata</i> (Arn.) Bitt.	G. Awasthi and Awasthi (2003)
		<i>R. pollinaria</i> (Westr. in Ach.) Ach.	G. Awasthi and Awasthi (2003)
		<i>R. sinensis</i> Jatta	G. Awasthi and Awasthi (2003)
28	<i>Cladonia</i>	<i>C. awasthiana</i> Ahti & Upreti	Ahti & Upreti (2004)
29	<i>Lecanora</i>	<i>L. campestris</i> ssp. <i>gulmargia</i> Upreti	Nayaka (2004)
		<i>L. carpineae</i> (L.) Vain.	Nayaka (2004)
		<i>L. chlarotera</i> Nyl.	Nayaka (2004)
		<i>L. cinereofusa</i> H. Magn.	Nayaka (2004)
		<i>L. dispersa</i> (Pers.) Sommerf.	Nayaka (2004)
		<i>L. flavidofusa</i> Müll. Arg.	Nayaka (2004)
		<i>L. flavidomargimata</i> B. de Lesd.	Nayaka (2004)
		<i>L. frustuulosa</i> (Dick.) Ach.	Nayaka (2004)
		<i>L. garovaglii</i> (Körb) Zahlbr	Nayaka (2004)
		<i>L. hellmichiana</i> Poelt	Nayaka (2004)
		<i>L. himalayae</i> Poelt	Nayaka (2004)
		<i>L. indica</i> (Stirton) Zahlbr.	Nayaka (2004)
		<i>L. intricata</i> (Schrad.) Ach.	Nayaka (2004)
		<i>L. kirra</i> Poelt & Grube	Nayaka (2004)
		<i>L. meridionalis</i> H. Magn.	Nayaka (2004)
		<i>L. muralis</i> var. <i>muralis</i> (Schreb.) Rabenh.	Nayaka (2004)
		<i>L. muralis</i> var. <i>dubyi</i> (Müll. Arg.) Poelt	Nayaka (2004)
		<i>L. phaedrophthalma</i> Poelt	Nayaka (2004)
		<i>L. subpraesistens</i> S. Nayaka & D. Upreti	Nayaka (2004)

Lichen families Parmeliaceae and Physciaceae are the dominant families of the state, while *Cladonia*, *Lecanora*, *Xanthoria*, *Caloplaca*, *Flavoparmelia*, *Phaeophyscia*, *Anaptychia*, *Dermatocarpon*, *Xanthoparmelia*, *Heterodermia*, *Peltigera*, *Parmelina*, *Chrysothrix*, *Parmelia* and *Physconia* are the dominant genera in the area.

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