

A less known taxa: Lichen records from Assam, NE India

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ABSTRACT

This checklist of lichens of Assam, India is made authors own collections during field trips within the study area as well as the references published on lichen diversity of this study area till 2021. This checklist comprises 317 number of species belonging to 101 genera and 38 families of ecologically diverse region. It has been revealed that the the family Graphidaceae has the most diversity of species.

Key words : Lichens, Assam, Graphidaceae.

Introduction

Lichens are one of the most complex life forms which can withstand the extremes of climate due to its complex symbiotic association of algae and fungi and its unique physiological association. And therefore it has been one of the important plant groups to study and document their importance in an ecosystem.

Phytogeographically the state of Assam of North East falls under biodiversity hot spot, the Eastern Himalayas, having varied landscape and climatic conditions. It has one of the rich diversity of lichen species that flourishes in this region. Thus the variation and presence of diverse species it leads to the diversity which are distinct to this part of the world. This region has got mosaic of climatic zones which leads to the formation of different forest types from semi-evergreen to evergreen type.

The study of lichen diversity from this study area was started by Stirton (1881). In the latter years various researchers have worked on the lichen diversity

of Assam along with the other parts of North East of India Awasthi and Singh, 1973; Pant and Upreti, 1993, Rout *et al.*, 2010; Gupta *et al.*, 2013; Daimari *et al.* 2014; Choudhary *et al.*, 2016; Mishra *et al.* 2019; Gupta and Sinha, 2016. Recently, Gogoi *et al.*, 2018 have have reported some new species from this region.

Due to conservation crisis and there sensitivity to air pollution has lead to the extinction of many lichen species which were endemic/restricted only to this ecological hotspot. And for which it has become utmost necessary to conserve this group of plants with proper scientific interventions from the consequences of extinction from the complex ecosystem of this diverse Eastern Himalayas.

The Lichen are necessary critical components to an ecosystem therefore conservation efforts are necessary to preserve their biodiversity. As these long term shift in climate patterns impacts this region are broad and somewhat unpredictable, therefore protection in its natural habitat is important as we rely on it.

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Materials and Method

Study Area

The present study on documentation and enumeration of Lichen species was from the state of Assam. Assam has an elevation of about 79.5m above sea level and covers an area of about 78,438 sq. Km. having the co-ordinates 26° 12' 2.174" N 92° 56' 15.266" E and annual average rainfall 1,524.6 mm. and average humidity is 83% and 211.76 cm respectively. The

state of Assam is topographically divided into the Brahmaputra valley, the Barak valley and the Mountainous Assam range having a subtropical climate. The state has diverse ecological habitats comprises of many Biosphere Reserve, National Park, and numerous wildlife sanctuary and Reserve forests which exhibits in this rich biodiversity.

Results

A total of 317 species of lichen has reported from varied habitat of Assam, belonging to 101 genera

Table 1.

Sl. No.	Name of the Taxa	Family
1.	<i>Acanthothecis leucoxantha</i> (Müll. Arg.) Staiger & Kalb	Graphidaceae
2.	<i>Alyxoria apomelaena</i> (A.Massal.)	-
3.	<i>A. culmigena</i> (Lib.) Ertz	-
4.	<i>A. varia</i> (Pers.) Ertz & Tehler	-
5.	<i>Amandinea submontana</i> Marbach	Caliciaceae
6.	<i>Anthracothecium assamiense</i> (Stirt.) Ajay Singh	Pyrenulaceae
7.	<i>A. cristatellum</i> Nagarkar & Patw.	-
8.	<i>A. indicum</i> A. Singh	-
9.	<i>A.interlatens</i> (Nyl.) Aptroot	-
10.	<i>A. macrosporum</i> (Hepp.) Müll. Arg	-
11.	<i>A. prasinum</i> (Eschw.) R.C. Harris	-
12.	<i>Arthonia dispersula</i> Nyl.	Arthoniaceae
13.	<i>A. inconspicua</i> Stirt.	-
14.	<i>A. medusala</i> (Pers.) Nyl.	-
15.	<i>A. polymorpha</i> Ach.	-
16.	<i>A. radiata</i> (Pers.) Ach.	-
17.	<i>A. recedens</i> Stirt.	-
18.	<i>A. subvelata</i> Nyl.	-
19.	<i>A.tumidua</i> (Ach.) Ach.	-
20.	<i>Arthothelium abnorme</i> (Ach.) Müll.Arg.	Arthoniaceae
21.	<i>A chiodectoides</i> (Nyl.) Zahlbr.	-
22.	<i>A dispersum</i> (DC.)Mudd.	-
23.	<i>A subruanum</i> Makhija & Patw.	-
24.	<i>Asterothyrium microsporum</i> R.Sant.	Asterothyriaceae
25.	<i>Aulaxina uniseptata</i> R. Sant.	Gomphillaceae
26.	<i>Bacidia alutacea</i> (Kremp.) Zahlbr.	Ramalinaceae
27.	<i>B. millegrana</i> (Taylor) Mull.Arg.	-
28.	<i>B. nigrofusca</i> (Müll. Arg.) Zahlbr.	-
29.	<i>B. rubella</i> (Hoffm.) Massal.	-
30.	<i>Brigantiaea leucoxantha</i> (Spreng.) R.Sant. & Hafellner	Brigantiaceae
31.	<i>Baculifera entochlora</i> (J. Steiner) Marbach	Caliciaceae
32.	<i>Buellia curtisii</i> (Tuck.) Marbach	Physciaceae
33.	<i>B proximata</i> H. Magn. -	-
34.	<i>Blastenia herbidella</i> (Arnold) Servit	Teloschistaceae
35.	<i>Bulbothrix isidiza</i> (Nyl.) Hale	Parmeliaceae
36.	<i>B. setschwanensis</i> (Zahlbr.) Hale	-
37.	<i>B. tabacina</i> (Mont. & Bosch) Hale	-
38.	<i>Byssoloma chlorinum</i> (Vain.) Zahlbr.	Pilocarpaceae
39.	<i>Calenia aspidota</i> (Vain.),Vezda Folia Geobot. Phytotax.	Gomphillaceae
40.	<i>Calicium robustellum</i> Nyl.	Pilocarpaceae
41.	<i>Calopadia fusca</i> Vezda, Folia Geobot. Phytotax.	Pilocarpaceae
42.	<i>C. subcoerulenscens</i> (Zahlbr.) Vezda, Sched. Lich. Sel. Exs.	-

Table 1. Continued

Sl. No.	Name of the Taxa	Family
43	<i>Caloplaca bassiae</i> (Willd.ex.Ach.) Zahlbr.	Teloschistaceae
44	<i>C. kashmirensis</i> Y. Joshi & Upreti	-
45	<i>C. pseudisteroides</i> Y. Joshi & Upreti	-
46	<i>Coenogonium dilucidum</i> (Kremp.) Kalb & Lücking	Coenogoniaceae
47	<i>C. interplexum</i> Nyl.	-
48	<i>C. minimum</i> (Müll. Arg.) Lücking	-
49	<i>Canoparmelia pustulescens</i> (Kurok.) Elix	Parmeliaceae
50	<i>Carbacanthographis marcescens</i> (Fée) Staiger & Kalb	Graphidaceae
51	<i>Catillaria pulverea</i> (Borrer) Lettau	Ramalinaceae
52	<i>Chapsa discoides</i> (Stirt.) Lücking	Graphidaceae
53	<i>C. leprocarpa</i> (Nyl.) Frisch	-
54	<i>Chiodecton andamanicum</i> Jagad. Ram	Opergraphaceae
55	<i>C. congestulum</i> Nyl	-
56	<i>C. leptosporum</i> Müll. Arg.	-
57	<i>Chrysothrix candelaris</i> (L.) J.R.Laundon	Chrysothrichaceae
58	<i>Cladonia fruticulosa</i> Kremp.	Cladoniaceae
59	<i>C. scabriuscula</i> (Delise) Nyl.	-
60	<i>C. subradiata</i> (Vain.) Sandst.	-
61	<i>C. verticillata</i> (Hoffm.) Schaer.	-
62	<i>Clathroporina anoptella</i> (Stirt.) Zahlbr.	Tricotheliaceae
63	<i>Coccocarpia palmicola</i> (Spreng.) Arv. & D.J.Galloway	Coccocarpiceae
64	<i>C. pellita</i> (Ach.) Müll. Arg.	-
65	<i>Cratiria lauricassiae</i> (Fee) Mull.Arg.	Caliciaceae
66	<i>C. obscurior</i> (Stirt.) Marbach & Kalb	-
67	<i>Cryptothecia awasthii</i> Makhija & Patw.	Arthoniaceae
68	<i>C.albomaculatella</i> Aptroot & Wolseley	-
69	<i>C.farinosa</i> Jagadeesh, G. P. Sinha & Kr.P. Singh	-
70	<i>C.faveomaculata</i> Makhija & Patw.	-
71	<i>C.effusa</i> (Mull.Arg.) R.Sant.	-
72	<i>C.lunulata</i> (Zahlbr.) Makh. & Patw.	-
73	<i>C.scripta</i> G. Thor	-
74	<i>C.stirtonii</i> A. L. Sm	-
75	<i>C. striata</i> G.Thor	-
76	<i>C.verruculifera</i> Jagadeesh, G.P.Sinh & Kr.P. Singh	-
77	<i>Diorygma hieroglyphicellum</i> Sutjar. & Kalb	Graphidaceae
78	<i>D.junghuhnii</i> (Mont. & Bosch) Kalb, Staiger & Elix	-
79	<i>D.megasporum</i> Kalb, Staiger & Flix	-
80	<i>D.pruinosum</i> (Eschw.) Kalb	-
81	<i>D.rupicola</i> B.O.Sharma & Khadikar	-
82	<i>D.soozanum</i> (Zahlbr.) M. Nakan. & Kashiw.	-
83	<i>Diplotema lauricassiae</i> (Fee) Szat.	Physciaceae
84	<i>Dirinaria aegialita</i> (Afz.in Ach.)Moore	Caliciaceae
85	<i>D. applanata</i> (Fée) D.D. Awasthi	-
86	<i>D. consimilis</i> (Stirt.) D.D. Awasthi	-
87	<i>D. papillulifera</i> (Nyl.) D.D. Awasthi	-
88	<i>D.picta</i> (Sw.) Clem. & Shear	-
89	<i>Dyplolabia afzelii</i> (Ach.) A. Massal.	Graphidaceae
90	<i>Echinoplaca marginata</i> Lücking	-
91	<i>Enterographa compunctula</i> (Nyl.) Redinger	-
92	<i>Fellhanera bouteillei</i> (Desm.) Vzda	Pilocarpaceae
93	<i>F. semecarpi</i> (Vain.) Vezda	-
94	<i>Fissurina cingalina</i> (Nyl.) Staiger	Graphidaceae
95	<i>F.columbina</i> (Tuck.) Staiger	-

Table 1. Continued

Sl. No.	Name of the Taxa	Family
96	<i>F.comparilis</i> (Nyl.) Nyl.	-
97	<i>F. dumastii</i> Fée	-
98	<i>F. elaiocarpa</i> (A.W.Archer)A.W.Archer	-
99	<i>F.humilis</i> (Buchner, 1940)	-
100	<i>Flavoplaca citrina</i> (Hoffm.) Arup, Frödén & Søchting	Teloschistaceae
101	<i>Graphidastra byssiseda</i> (Müll. Arg.) G. Thor	Roccellaceae
102	<i>Graphis albissima</i> Müll. Arg.	Graphidaceae
103	<i>G. ajarekarii</i> Patw. &C. R. Kulk.	-
104	<i>G. aquilonia</i> (A.W.Archer) Staiger	-
105	<i>G. arecae</i> Vain.	-
106	<i>G. caesiella</i> Vain.	-
107	<i>G. caesiocarpa</i> Redinger	-
108	<i>G. capillacea</i> Strit	-
109	<i>G. duplicata</i> Ach.	-
109	<i>G. elongata</i> Zenker	-
111	<i>G. filiformis</i> Adaw. & Makhija	-
112	<i>G. furcata</i> Fee	-
113	<i>G. garoana</i> Nag. & Patw.	-
114	<i>G. glaucescens</i> Fee	-
115	<i>G. handelii</i> Zahlbr.	-
116	<i>G. insulana</i> (Müll. Arg.) Lücking & Sipman	-
117	<i>G. intermediella</i> Stirt.	-
118	<i>G. intricata</i> Fee	-
119	<i>G. illinata</i> Eachw.	-
120	<i>G.leptocarpa</i> Fee	-
121	<i>G.librata</i> C. Knight	-
122	<i>G.lineola</i> Ach.	-
123	<i>G.nakanishiana</i> Patw. & C.R.Kulk.	-
124	<i>G. nigrocarpa</i> Adaw. & Makhija	-
125	<i>G. nigroglauca</i> Leighton	-
126	<i>G. pinicola</i> Zahlbr.	-
127	<i>G. proserpens</i> Vainio	-
128	<i>G. pyrrhocheiloides</i> Zahlbr.	-
129	<i>G.rimulosa</i> (Mont.) Trevis	-
130	<i>G.scripta</i> (L.) Ach.	-
131	<i>G.striatula</i> (Ach.) Spreng.	-
132	<i>G.subsahinae</i> Nagarkar & Patw.	-
133	<i>G. submarginata</i> Lücking	-
134	<i>G. subregularis</i> A.W. Archer	-
135	<i>G.subserpentina</i> Nyl.	-
136	<i>G. sundarbanensis</i> Jagadeesh & G.P.Sinha	-
137	<i>G.tenella</i> Ach.	-
138	<i>Glyphis cicatricose</i> Ach.	Graphidaceae
139	<i>G.duriuscula</i> Stirt.	-
140	<i>G.scyphulifera</i> (Ach.) Staiger	-
141	<i>Gyalolechia bassiae</i> (Ach.) Søchting, Frödén & Arup ex Ahti	Teloschistaceae
142	<i>Haematomma puniceum</i> (Ach.) A. Massal.	Haematommataceae
143	<i>Hemithecium chrysenteron</i> (Mont.) Trevis.	Graphidaceae
144	<i>H. epixanthum</i> (Mont. & Bosch) Chitale & Makhija	-
145	<i>Herpothallon echinatum</i> Aptroot & Lücking & Will -Wolf	Arthoniaceae
146	<i>H. granulare</i> (Sipman) Aptroot & Lücking	-
147	<i>H. isidiatum</i> Jagadeesh & G.P.Sinha	-
148	<i>H. philippinum</i> (Vain.) Aptroot & Lücking	-

Table 1. Continued

Sl. No.	Name of the Taxa	Family
149	<i>Heterodermia albidiflava</i> (Kurok.) D.D. Awasthi	Physciaceae
150	<i>H. diademata</i> (Taylor) D.D. Awasthi	-
151	<i>Hyperphyscia adglutinata</i> var. <i>pyrithrocardia</i> (Müll. Arg.) D.D. Awasthi	Physciaceae
152	<i>H. minor</i> (Fée) Kalb.	-
153	<i>Laurera subbenguelensis</i> Upreti & A. Singh	Trypetheliaceae
154	<i>Lathagrium auriforme</i> (With.) Otálora, P.M. Jørg. & Wedin	Collemataceae
155	<i>Lecanora achroa</i> Nyl.	Lecanoraceae
156	<i>L. austrointumescens</i> Lumbsch & Elix	-
157	<i>L. alba</i> Lumbsch	-
158	<i>L. allophana</i> (Ach.) Nyl.	-
159	<i>L. cenisia</i> Ach.	-
160	<i>L. flavidofusca</i> Mull.Arg.	-
161	<i>L. interjecta</i> Mull.Arg.	-
162	<i>L. helva</i> Stizenb.	-
163	<i>L. leprosa</i> Fée	-
164	<i>L. perplexa</i> Brodo	-
165	<i>L. tropica</i> Zahlbr.	-
166	<i>L. saligna</i> (Schrad.) Zahlbr.	-
167	<i>Lecanographa rufa</i> Mull.Arg. Ertz.	Lecanographaceae
168	<i>Lecidella elaeochroma</i> (Ach.) M. Choisy	-
169	<i>Lepora albescens</i> (Huds.) Hafellner	Pertusariaceae
170	<i>Leptogium chloromelum</i> (Ach.) Nyl	Collemataceae
171	<i>L. cyanescens</i> (Ach.) Körb	-
172	<i>L. millegranum</i> Sierk	-
173	<i>L. phyllocarpum</i> (Pers.) Mont.	-
174	<i>Letrouitia flavocrocea</i> (Nyl.) Hafellner & Bellem	Letrouitiaceae
175	<i>L. mularis</i> Hafellner Hedwigia	-
176	<i>L. transgressa</i> (Malme) Hafellner & Bellem	-
177	<i>L. vulpine</i> (Tuck.) Hafellner & Bellem.	-
178	<i>Lopadium leucoxanthum</i> (Spreng.) Zahlbr.	Lopadiaceae
179	<i>Mazosia melanophthalma</i> (Mull.Arg.) R.Sant.	Roccellaceae
180	<i>Malmidea papillosa</i> Weerakoon & Aptroot	Malmideaceae
181	<i>M. granifera</i> (Ach.) Kalb, Rivas Plata & Lumbsch	-
182	<i>Micarea</i> spp.	Pilocarpaceae
183	<i>Mikhtomia flavorubescens</i> (Huds.) S.Y. Kondr. & J.-S. Hur	Teloschistaceae
184	<i>M. gordejewii</i> (Tomin) S. Y. Kondr., Kärnefelt, Elix, A. Thell	-
185	<i>Multiclavula vernalis</i> (Schw.) Petersen	Clavulinaceae
186	<i>Myriotrema albocinctum</i> Hale	Thelotremataceae
187	<i>M. anamalaiense</i> (Patw. & C.R.Kulk.) Hale	-
188	<i>M. clandestinum</i> (Fée) Hale	-
189	<i>M. microporum</i> (Mont.) Hale	-
190	<i>M. reclusum</i> (Kremp.) Hale	-
191	<i>Nigrovothelium bullatum</i> Lücking, Upreti & Lumbsch	Trypetheliaceae
192	<i>N. tropicum</i> (Ach.) Lücking, M.P. Nelsen & Aptroot	-
193	<i>Ochrolechia subpallescens</i> Verseghy	Pertusariaceae
194	<i>Opegrapha discolor</i> Vain.	Opegraphaceae
195	<i>O. prosodea</i> Ach.	-
196	<i>O. subvulgata</i> Nyl.	-
197	<i>O. vulgata</i> (Ach.) Ach.	-
198	<i>Pallidogramme chapadana</i> (Redinger) Staiger, Kalb. & Lücking	Graphidaceae
199	<i>P. chlorocarpoides</i> (Nyl.) Staiger, Kalb & Lücking	-
200	<i>P. chrysenderodes</i> (Nyl.) Kr.P. Singh & Swarnal.	-
201	<i>P. chrysenderon</i> (Mont.) Staiger, Kalb & Lücking	-

Table 1. Continued

Sl. No.	Name of the Taxa	Family
202	<i>Parmotrema austrosinense</i> (Zahlbr.) Hale	Parmeliaceae
203	<i>P. cooperi</i> (J. Steiner & Zahlbr.) Sérus.	-
204	<i>P. hababianum</i> (Gyeln.) Hale	-
205	<i>P. praeserediosum</i> (Nyl.) Hale	-
206	<i>P. reticulatum</i> (Taylor) M. Choisy	-
207	<i>P. saccatilobum</i> (Taylor) Hale	-
208	<i>P. sancti-angelii</i> (Lyngé) Hale	-
209	<i>P. tinctorum</i> (Despr. ex Nyl.) Hale	-
210	<i>P. zollingeri</i> (Hepp) Hale	-
211	<i>Pertusaria albescens</i> (Huds.) M. Choisy & Werner	Pertusariaceae
212	<i>P. amara</i> (Ach.) Nyl.	-
213	<i>P. cinchonae</i> Müll. Ach.	-
214	<i>P. coccodes</i> (Ach.) Nyl.	-
215	<i>P. depressa</i> (Fée) Mont & Bosch.	-
216	<i>P. granulate</i> (Eschw.) Müll. Arg.	-
217	<i>P. leioplacella</i> Nyl.	-
218	<i>P. maculate</i> Kr. P. Singh & G.P. Sinha	-
219	<i>P. quassie</i> (Fée) Nyl.	-
220	<i>P. subochracea</i> Stirt.	-
221	<i>Phaeographis albolabiata</i> Patw. & C.R. Kulk.	Graphidaceae
222	<i>P. brasiliensis</i> (A. Massal.) Kalb & Matthes- Leicht	-
223	<i>P. caesiodisca</i> Staiger	-
224	<i>P. Dendritica</i> (Ach.) Müll. Arg.	-
225	<i>P. leightonii</i> Patw. & C.R. Kulk.	-
226	<i>Phaeophyscia endococcina</i> (Körb.) Moberg	Physciaceae
227	<i>P. hispidula</i> (Ach.) Essl.	-
228	<i>P. pyrrophora</i> (Poelt) D.D. Awasthi & M. Joshi	-
229	<i>Phlyctis karnatakana</i> S. Joshi & D.K. Upreti	Phlyctidaceae
230	<i>P. himalayensis</i> (Nyl.) D.D. Awasthi	-
231	<i>Phyllopsora corallina</i> (Eschw.) Müll. Arg.	Ramalinaceae
232	<i>P. buettneri</i> (Müll. Arg.) Zahlbr.	-
233	<i>P. furfuracea</i> (Pers.) Zahlbr.	-
234	<i>Physcia crispa</i> Nyl.	Physciaceae
235	<i>P. dubia</i> (Hoffm.) Lettau	-
236	<i>P. tribacioides</i> Nyl.	-
237	<i>Platygramme muelleri</i> (A.W. Archer) Staiger	Graphidaceae
238	<i>P. pudica</i> var. <i>platyloma</i> (Mont. & Bosch) M. Nakan. & Kashiw.	-
239	<i>Platythecium dimorphodes</i> (Nyl.) Staiger	Graphidaceae
240	<i>Polymeridium suffusum</i> (C. Knight) Aptroot	Trypetheliaceae
241	<i>Porina dolichophora</i> (Nyl.) Müll. Arg.	Porinaceae
242	<i>Porina eminator</i> (Nyl.) P.M. McCarthy	-
243	<i>Porina interstes</i> (Nyl.) Harm.	-
245	<i>Porina karnatakensis</i> Makhija Adaw. & Patw.	-
246	<i>Porina mastoidella</i> (Nyl.) Müll. Arg.	-
247	<i>Porina subsanctirosae</i> Makhija et al.	-
248	<i>Pseudocyphellaria aurata</i> (Ach.) Vain	Lobariaceae
249	<i>Psorotheciopsis patellarioides</i> (Rehm.) R. Sant.	Asterothyriaceae
250	<i>Pyrenula acutalis</i> R.C. Harris	Pyrenulaceae
251	<i>P. andina</i> Aptroot	-
252	<i>P. anomala</i> (Ach.) Vain.	-
253	<i>P. arthoniotheca</i> Upreti	-
254	<i>P. bilirana</i> Vain.	-
256	<i>P. brunnea</i> Fée	-

Table 1. Continued

Sl. No.	Name of the Taxa	Family
257	<i>P.coactella</i> (Stirt.) Upreti	-
258	<i>P.costaricensis</i> Müll.Arg.	-
259	<i>P.immissa</i> (Stirt.) Zahlbr.	-
260	<i>P.introducta</i> (Stirt.) Zahlbr.	-
261	<i>P.leucostoma</i> Ach.	-
262	<i>P.leucotrypa</i> (Nyl.) Upreti	-
263	<i>P.oculata</i> A. Singh & Upreti	-
264	<i>P.ravenelii</i> (Tuck.) R. C. Harris	-
265	<i>P.subducta</i> (Nyl.) Müll. Arg.	-
266	<i>P.submastophora</i> A. Singh & Upreti	-
267	<i>P.macularis</i> (Zahlbr.) R.C. Harris	-
268	<i>P.mastophoroides</i> (Nyl.) Zahlbr	-
269	<i>P.mamillana</i> (Ach.) Trevis.	-
270	<i>P.nitida</i> (Weigel) Ach.	-
271	<i>P..nodulata</i> (Stirt.) Zahlbr.	-
272	<i>P.ochraceoflava</i> (Nyl.) R.C. Harris	-
273	<i>P.quassiaecola</i> Fee	-
274	<i>P.subelliptica</i> (Tuck.) R.C. Harris	-
275	<i>P.thelomorpha</i> Tuck.	-
276	<i>P.tropicum</i> (Ach.) Müll.Arg.	-
277	<i>Pyxine berteriana</i> (Fee) Imsh.	Physciaceae
278	<i>P.cocoes</i> var. <i>cocoes</i> (Sw.) Nyl.	-
279	<i>P.cocoes</i> var. <i>prominula</i> (Stirton) Awasthi	-
280	<i>P.coralligera</i> Malme	-
281	<i>P.retirugella</i> Nyl.	-
282	<i>P. meissnerina</i> Nyl.	-
283	<i>P.subcinerea</i> Strit.	-
284	<i>Ramboldia haematites</i> (Fée) Kalb, Lumbsch & Elix	Ramboldiaceae
285	<i>Rinodina oxydata</i> (A. Massal.) A. Massal	Pyhsciaceae
286	<i>Sarcographa subtrichosa</i> (Leight.) Müll. Arg.	Graphidaceae
287	<i>S.cinchonarum</i> Fée	-
288	<i>S.glyphiza</i> (Nyl.) Kr.P. Singh & G.P.Sinha	-
289	<i>S.labyrinthica</i> (Ach.) Mull.Arg.	-
290	<i>S.leprieurii</i> (Mont.) Mull.Arg.	-
291	<i>S.medusulina</i> (Nyl.) Mull.Arg.	-
292	<i>S. subtrichosa</i> (Leight.) Müll.Arg.	-
293	<i>S. trichosa</i> (Ach.) Mull.Arg.	-
294	<i>Sarcographina subtorquescens</i> (Nyl.) Zahlbr.	Graphidaceae
295	<i>Stigmatochroma adauctum</i> (Malme) Marbach	Caliciaceae
296	<i>Stirtonia obvallata</i> (Stirt.) A.I.Sm.	Arthoniaceae
297	<i>Strigula.hypothallina</i> R.C. Harris	Strigulaceae
298	<i>S.maculata</i> (Cooke & Masee) R.Sant.	-
299	<i>S.nemathora</i> Mont.	-
300	<i>S.nitidula</i> Mont.	-
301	<i>S. orbicularis</i> Fr.	-
302	<i>S.phyllogena</i> Fr.	-
303	<i>S.samaragdula</i> Fr.	-
304	<i>S. subelegans</i> Vain.	-
305	<i>Synarthonia bicolor</i> Mull.Arg.	Arthoniaceae
306	<i>Thecaria austroindica</i> (D.D. Awasthi & Upreti) Kr.P. Singh & G.P. Sinha	Graphidaceae
307	<i>T.farinosa</i> R. Sant.	-
308	<i>T. vainioi</i> R. Sant.	-

Table 1. Continued

Sl. No.	Name of the Taxa	Family
309	<i>Trypethelium ceylonicum</i> Makhijia & Patw.	Trypetheliaceae
310	<i>T. eluteriae</i> Spreng.	-
311	<i>T. ochroleucum</i> (Eschw.)Nyl.	-
312	<i>T. rubrocinctum</i> Makhijia & Patw.	-
313	<i>T. tropicum</i> (Ach.) Mull.Arg.	-
314	<i>T. ubianense</i> (Vain.)Zahlbr.	-
315	<i>Usnea pectinata</i> Stirt.	Parmeliaceae
316	<i>Zwackhia bonplandii</i> (Fée) Ertz.	Lecanographaceae
317	<i>Z. viridis</i> (Ach.) Poetsch & Schied.	-

Table 2. Number of species occurrence with respect to family.

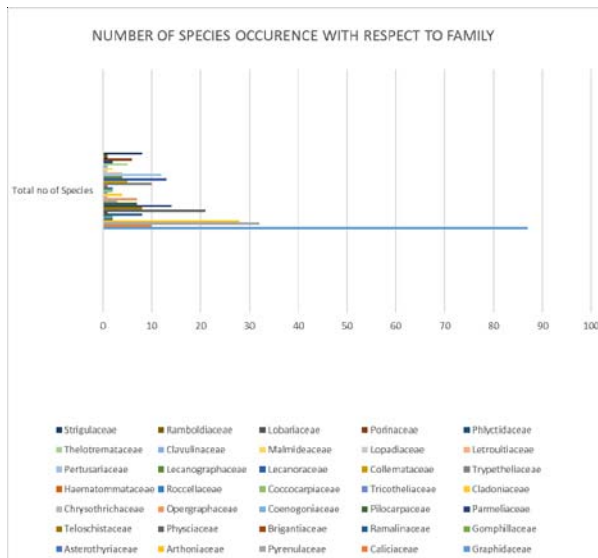
Sl. No.	Name of family	Name of genera	No of spp
1	Graphidaceae	<i>Acanthothecis</i>	1
		<i>Alyxoria</i>	3
		<i>Chapsa</i>	1
		<i>Diorygma</i>	6
		<i>Dyplolabia</i>	1
		<i>Echinoplaca</i>	1
		<i>Enterographa</i>	1
		<i>Fissurina</i>	6
		<i>Graphis</i>	36
		<i>Glyphis</i>	3
		<i>Hemithecium</i>	2
		<i>Pallidogramme</i>	4
		<i>Phaeographis</i>	5
		<i>Platygramme</i>	2
		<i>Platythecium</i>	1
		<i>Sarcographa</i>	8
		<i>Sarcographina</i>	1
<i>Thecaria</i>	3		
2	Caliciaceae	<i>Amandinea</i>	1
		<i>Baculifera</i>	1
		<i>Cratiria</i>	2
		<i>Dirinaria</i>	5
3	Pyrenulaceae	<i>Stigmatochroma</i>	1
		<i>Anthracothecium</i>	6
4	Arthoniaceae	<i>Arthonia</i>	8
		<i>Arthothelium</i>	4
		<i>Cryptothecia</i>	10
		<i>Herpothallon</i>	4
		<i>Stirtonia</i>	1
		<i>Synarthonia</i>	1
5	Asterothyriaceae	<i>Asterothyrium</i>	1
		<i>Psorotheciopsis</i>	1
6	Gomphillaceae	<i>Aulaxina</i>	1
		<i>Calenia</i>	1
7	Ramalinaceae	<i>Bacidia</i>	4
		<i>Catillaria</i>	1

Table 2. Continued ...

Sl. No.	Name of family	Name of genera	No of spp
8	Brigantiaceae	<i>Phyllopsora</i>	1
		<i>Brigantiaea</i>	1
9	Physciaceae	<i>Buellia</i>	2
		<i>Diplotema</i>	1
		<i>Heterodermia</i>	2
		<i>Hyperphyscia</i>	2
		<i>Phaeophyscia</i>	3
		<i>Physcia</i>	3
		<i>Pyxine</i>	7
10	Teloschistaceae	<i>Rinodina</i>	1
		<i>Blastenia</i>	1
		<i>Caloplaca</i>	3
		<i>Gyalolechia</i>	1
11	Parmeliaceae	<i>Mikhtomia</i>	2
		<i>Bulbothrix</i>	3
		<i>Canoparmelia</i>	1
12	Pilocarpaceae	<i>Parmotrema</i>	9
		<i>Usnea</i>	1
		<i>Byssoloma</i>	1
		<i>Caliciums</i>	1
13	Coenogoniaceae	<i>Calopadia</i>	2
		<i>Fellhanera</i>	2
14	Opergraphaceae	<i>Micarea</i>	1
		<i>Coenogonium</i>	3
15	Chrysothrichaceae	<i>Chiodecton</i>	3
		<i>Opegrapha</i>	4
16	Cladoniaceae	<i>Chrysothrix</i>	1
		<i>Cladonia</i>	4
17	Tricotheliaceae	<i>Clathroporina</i>	1
		<i>Coccocarpia</i>	2
18	Roccellaceae	<i>Graphidastra</i>	1
		<i>Mazosia</i>	1
19	Haematommataceae	<i>Haematomm</i>	1
		<i>Laurera</i>	1
20	Trypetheliaceae	<i>Nigrothelium</i>	2
		<i>Polymeridium</i>	1
		<i>Trypethelium</i>	6
21	Collemataceae	<i>Lathagrium</i>	1

Table 2. Continued ...

Sl. No.	Name of family	Name of genera	No of spp
		<i>Leptogium.</i>	4
23	Lecanoraceae	<i>Lecanora</i>	12
		<i>Lecanographa</i>	1
		<i>Lecidella</i>	1
24	Pertusariaceae	<i>Leptra</i>	1
		<i>Ochrolechia</i>	1
		<i>Pertusaria</i>	10
25	Letrouitiaceae	<i>Letrouitia</i>	4
26	Lopadiaceae	<i>Lopadium</i>	1
27	Malmideaceae	<i>Malmidea</i>	1
28	Clavulinaceae	<i>Multiclavula</i>	1
29	Thelotremataceae	<i>Myriotrema</i>	5
30	Phlyctidaceae	<i>Phlyctis</i>	2
31	Porinaceae	<i>Porina</i>	6
32	Lobariaceae	<i>Pseudocyphellaria</i>	1
33	Ramboldiaceae	<i>Ramboldia</i>	1
34	Strigulaceae	<i>Strigula</i>	8
35	Lecanographaceae	<i>Zwackhia</i>	2

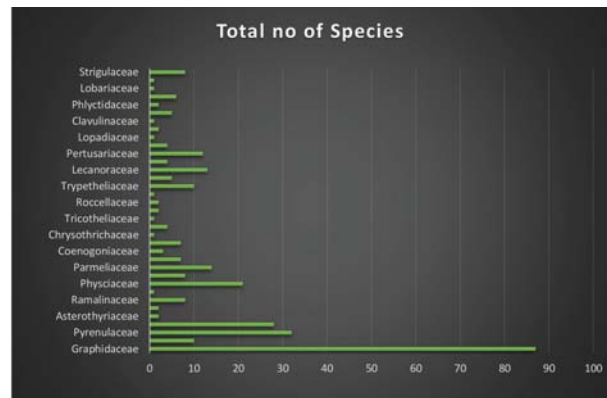


and 35 families. It is found that the family Graphidaceae has the highest occurrence from this diverse eco region.

Discussion

The present study have revealed the luxuriant diversity of lichens. The present study area have several ecologically sensitivities areas like Reserve forests ,National Parks, Wildlife Sancturries which become necessary to conserve for the pioneer colonizers.

Moreover this biodiversity hotspots have been facing human encroachment, habitat fragmentation etc. So to safeguard this group of plants from grave



consequences of extinction from the complex ecosystem of the present study areas as well as from this diverse region of Eastern Himalayas, it is high time to step forward *in situ* conservation of the lichen diversity.

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