

MYCOLOGICAL STUDIES AT ANTARCTICA

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Abstract

The Botanical survey of India took up the project "Plant Diversity of Schirmacher Oasis" in 1996. In its maiden venture, the Bryophytes were surveyed during the XVI expedition. During the year 1997, the Department had proposed to take up the second group of plants i.e. fungi.

Objectives

Objectives of BSI during XVII expedition was to carry out the mycological studies in the following areas.

1. Survey, Collection and Preservation of plant specimens particularly of Fungi from different environs of Schirmacher Oasis.
2. Morpho-taxonomical studies on fungi with a view to inventorise the various taxa occurring there.
3. To study the geographical and morphological similarities with India mycoflora
4. To study the response of psychrotolerant and psychrophilic fungi towards the harsh climate conditions of Antarctica.

Activities

During the stay at Maitri from 4.1.98 to 21.2.98, more stress was laid on the survey, collection and preservation of

plant samples from all parts of Schirmacher Oasis including Humbolts mountains and Vettiya nunatk. The fungi at these places can grow on the following major habitats :

1. Moss bogs (Mb)
2. Lichens (Lich.)
3. Bird excreta (BE)
4. Skeleton remains (SR)
5. Ornithogenic soils (OS)
6. Aliens (Debris, Wood etc.)

These habitats were repeatedly surveyed for collection of samples as per the programme given below :

- 04.01.98 Survey of Pryadarshani lake and basins of nearby melt
to water streams. In all about 14 samples were collected
07.01.98 as per details included under central schirmacher in
Table-1
- 08.01.98 A Survey camp was established in Western Schirmacher
to (with a call sign SIERA Whisky) about 8 km away from
15.01.98 Maitri alongwith Dr. Jaffery (NGRI), Dr. Burman
(ZSI), Dr. Pandey (NBRI) and Sh. Suresh Singh
(BHU). During this period, surveyed all the lakes,
lake basins, meltwater streams and their surroundings
in the Western Schirmacher. In all about 100 samples
were collected as per the details given in the Table-1.
All the collected samples were dried, processed and
field notes were completed on all of them.
- 16.12.98 Took about 12 traverses into the East of Maitri in the
to Eastern Schirmacher and Collected about 115 samples as
26.01.98 per the details given in the Table-1. All samples were
dried, processed and field notes were completed on all
of them.
- 01.02.98 During this period, covered 13 traverses including two
to to the nearby nunatk (Vetiahah Kailash) and one to
21.02.98 the Humbolts ranges of mountains, were undertaken in

the Central Schirmacher. In all about 74 samples of plants from Central Schirmacher; 7 samples from Vettiya Kailash and 4 from Humbolts mountains were collected as per the details given in Table-1. All the samples were properly dried, processed and field notes were written on them. The occurrence of *Usnea sulphurea* and *Umbilicaria decussata* in Vetiaya nunatk was very significant and recorded for the first time during the Survey of Schirmacher Oasis.

Hence the primary objective of completing the Survey work was achieved satisfactorily. In all about 324 samples of fungi from moss bogs (154), Lichens (77), Bird excreta (31), Skeleton remains (23) ornithogenic soil (25) and debris (14) were collected, dried and preserved with completed field notes.

Though many specimens were tentatively identified broadly into classes like Ascomycetes and Denteromycetes, the correct identification of samples began with the morpho-taxonomical investigations in the laboratory. The result of these investigations completed so far, are presented in the Table-2.

Table -1 Details of samples

Area and No. of traverses	Habitat and no. of samples collected					
	Moss bogs	Lichens	BE	SR	OS	Aliens
W.S. (6)	55	25	10	4	6	--
C.S. (10)	35	16	9	14	14	10
E.S. (12)	62	30	10	5	4	4
Vet. (2)	2	5	—	--	-	—
Humb. (1)	-	1	2	--	1	—
Total	154	177	31	23	25	14

Table - 2 Results

On return from the expedition, the number of samples (shown in brackets) studied in each category and the species of fungi isolated and identified are as follows :

Sl. No.	No.of samples	Fungal species
1.	Moss gogs (60)	Arthrotrys ferox
2.	Bird excreta (15)	Torulopsis psychrophila phoma herbarum
3.	Skeleton remains (10)	Phoma herbarum
4.	Lichens (25)	Acremonium antarcticum A. psychrophilum
5.	Ornithogenic soils (15)	Torulopsis, Psychrophila & Cryptococcus sp.
6.	Aliens (14)	Hormoconis resinae on oil spills Dacrymyces sp. on wooden debris Exidia sp. on wooden debris.

Conclusion

Out of the 139 samples studied, 9 species of fungi belonging to Hyphomycetes, Ascomycetes and Basidiomycetes have been identified.

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