

PRELIMINARY SURVEY OF THE TERRESTRIAL ALGAE OF SCHIRMACHER OASIS, ANTARCTICA

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The Schirmacher Oasis (Maitri Hills) was visited during 27th December, 1986 to February 11, 1987 to study the terrestrial algal flora. Two hundred sixty eight samples of algae were collected from 15 different sites. They were subjected to microscopic observations within twenty four hours of collection and detailed morphological features of the representative genera were recorded. Sixteen genera of algae belonging to Cyanophyceae (12), Chlorophyceae (2) and Bacillariophyceae (2) were observed. Among the Cyanophyceae a total of 25 species have been recorded. For the sake of convenience, the algae growing in the above area was divided into three habitats and their systematic position has been mentioned in the table appended.

The results showed that nearly 80% of the collected samples contained nitrogen fixing forms suggesting that such forms are widely distributed in Schirmacher Oasis. It was of interest to note that no spore forming blue-green algae was encountered. Instead all forms growing in the region and thick, tough and pigmented mucilage around the cells or trichomes. The common means of propagation in these algae seems to be fragmentation or formation of hormogones.

Totally desiccated mats of blue-green algae were brought to laboratory following expedition and were subjected to nitrogen fixation studies. Rates of acetylene reduction by wet mats of *Nostoc commune* ranged between 86.3 ± 3.6 and 12.6 ± 3.3 pmol C₂H₄/ug Chl a/h at 4°C (light intensity 1000 lux approx.) under light and dark conditions respectively. Under similar conditions mats on *N. commune*, *Schizothrix* and *Calothrix* showed a rate of 47.6 ± 5.3 and 6.3 ± 4.6 pmol C₂H₄/ug Chl a/h under light and dark conditions, respectively. In contrast acetylene reduction was not observed in dry mat suggesting that maximal nitrogen fixation by Antarctic blue-green algae may occur during periods when microclimatic conditions are most favourable.

ALGAE FROM SCHIRMACHER RANGE, ANTARCTIC

Cyanobacteria in association with moss (<i>Bryum</i> so.)	Cyanobacteria growing on soils
Chroococcales	1. Chroococcales
Chroococcaceae	Chroococcaceae
a. <i>Gloeocapsa</i> (3 sp)	a. <i>Gloeocapsa</i> (2 sp)
b. <i>Aphanothece</i> (1 sp)	b. <i>Chroococcus</i> (1 sp)
c. <i>Aphanocapsa</i> (1 sp)	
2. Nostocales	2. Nostocales
Nostocaceae	Oscillatoriaceae
a. <i>Nostoc</i> (2 sp)	a. <i>Oscillatoria</i> (4 sp)
	b. <i>Phormidium</i> (2 sp)
	c. <i>Schizothrix</i> (2 sp)
	d. <i>Tolypothrix</i> (1 sp)
3. Stigonematales	3. Nostocaceae

Stigonemataceae

a. Stigonema (1 sp)

a. Nostoc (2 sp)

b. Calothrix (1 sp)

III. Algae in association with quartz rock

A. Cyanopacteria

1. Chroococcales

Chroococcaceae

a. Gloeocapsa (1 sp)

2. Nostocales

Oscillatoriaceae

a. Oscillatoria (2 sp)

b. Lyngbya (1 sp)

B. Chlorophyceae

1. Chlorococcales

a. Chlorococcum (1 sp) .

C. Bacillariophyceae

1. Pennales

a. Pinnularia (1 sp)

b. Hantzschia (1 sp)