

## SOME FRESHWATER ALGAE FOUND IN VARIOUS LOCALITIES OF PESHAWAR VALLEY

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### ABSTRACT

A total of 47 species belonging to 14 genera of Chlorophyceae, Cyanophyceae, Bacillariophyceae and Xanthophyceae viz, *Spirogyra*, *Mougeotia*, *Stigeoclonium*, *Rhizoclonium*, *Ulothrix*, *Cladophora*, *Vaucheria*, *Microspora*, *Pithophora*, *Acanthes*, *Closterium*, *Oscillatoria* and *Phormidium* were recorded from various localities of Peshawar valley.

**Key words:** Fresh water algae, Peshawar valley, Mardan, Swabi, Nowshera

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### INTRODUCTION

Peshawar valley is saucer shaped, semi-circular in topographic exposure surrounded by mountainous series all around except in the east. This is situated in the NWFP of Pakistan. The total length of the valley from west to east ranges up to 110km while the width reaches up to 80 km from north to south covering almost an area of 8800sq. km. It lies between 71° 15' E 72° 47'E longitude and 33° 40'N and 34° 31'N latitudes surrounded by mountains on three sides; Malakand-Lower Swat ranges in the north; Mohammad and Khyber hills in the west; towards the south it is delimited by the Cherat, while in the east, the Indus River forms the boundary between Peshawar valley and the Potwar Plateau. The altitude of Peshawar valley ranges from Peshawar (365 m) to Malakand Pass (1800 m). The valley is supposed to be a lake in the past and has been turned into the present plains by sedimentation of the various soil particles reaching up to 300m in thickness that is mainly composed of silt, clay, loam, gravel and boulders. Bedrock outcrops scattered throughout the valley can be observed.

The sub-catchment of Peshawar valley comprises the whole of Peshawar, Mardan, Swabi and Nowshera districts plus small parts of the neighboring tribal territories. It has a hot sub-tropical continental climate which is semi-arid in the North-West corner and sub-humid in the remaining parts. It becomes very hot in summer and sometimes the temperature reaches up to 120 °F of June. The mean maximum temperature recorded for the months, June and July is 104.4 °F and 101 °F and mean minimum temperature recorded for some months is 78 °F and 80 °F.

The present work was undertaken as part of a programme to explore the algal flora of Pakistan. The study include the taxonomy of fresh water algae of various localities of Peshawar valley in summer season.

### MATERIALS AND METHODS

Visits were made along with necessary equipments to the research area and the specimens were collected by hand picking, squeezing and scrapping the aquatic vegetation. The specimens collected were numbered and preserved in 3% formalin (Sarim and Faridi, 1978). These specimens were identified with the help of microscope according to Prescott (1951), Tiffany (1952), Desikachary (1959) and other standard literature. The photographs and diagrams of the specimens were drawn with the help of Camera Lucida. The identified preserved collection has been deposited in the herbarium, Botany Department, University of Peshawar.

### RESULTS AND DISCUSSION

A total of 47 species belonging to 14 genera of Chlorophyceae, Cyanophyceae, Bacillariophyceae and Xanthophyceae were recorded from various localities of Peshawar valley. The study reveals that members of Chlorophyceae are abundant in the freshwater as compared to other groups of algae. The most abundant and frequent genus is *Spirogyra*. It is represented by 16 species. The abundance of *Spirogyra* may be partly attributed to the turbid condition of water. The *Spirogyra condensata* is isolated from 3 locations out of 9. Similarly *S. crassa*, *S. daedaleoides* and *S. subsalsa* were collected from two sites. *Mougeotia* is next to *Spirogyra* in abundance. Nine species of *Mougeotia* were collected in the present study. The *M. robusta* is isolated from 3 sites out of 9 while *M. laetevirens* was collected from 2 sites. The genera *Oscillatoria* and *Phormidium* belonging to Cyanophyceae are next to *Mougeotia*. Two species of *O. princeps*, *O. tenuis* were collected from a single site while *P. incrustatum*, *P.*

*retzii* were also collected from the same study area. The genera *Achanthes* and *Vaucheria* were the least represented having one species each.

**Table 1. A list of fresh water algae recorded from Peshawar valley.**

S.No	Species	Sites name	Class
1	<i>Spirogyra. aequinotialis</i> G.S West	Harichand -8	<b>Chlorophyceae</b>
2	<i>S. condensata</i> Vauch Kuetzing	Khanmai – 4	-do-
3	<i>S. crassa</i> Kuetzing	Daudzai -2	-do-
4	<i>S. daedaleoides</i> Czurda	Harichand -5	-do-
5	<i>S. decimina</i> (Mueller) Kuetzing	Harichand -8	-do-
6	<i>S. nitida</i> (Dillw) Link	Khanmai -4	-do-
7	<i>S. pratensis</i> Transeau	Daudzai -3	-do-
8	<i>S. porticalis</i> (Muell) Cleve	Khanmai – 4	-do-
9	<i>S. scrobiculata</i> Czurda	Daudzai -2	-do-
10	<i>S. subsalsa</i> Kuetzing	Daudzai -2	-do-
11	<i>S. varians</i> Kuetzing	Harichand -7	-do-
12	<i>Mougeotia tumidula</i> Transeau	Daudzai -1	-do-
13	<i>M. laetevirens</i> Wittrock	Daudzai -1	-do-
14	<i>M. robusta</i> Wittrock	Daudzai -1	-do-
15	<i>M. scalaris</i> Hassall	Daudzai -1	-do-
16	<i>M. sphaerocarpa</i> Wolle	Harichand -7	-do-
17	<i>S. condensata</i> Vauch Kuetzing	Harichand -7	-do-
18	<i>S. daedaleoides</i> Czurda	Harichand -7	-do-
19	<i>S. crassa</i> Kuetzing	Harichand -7	-do-
20	<i>S. subsalsa</i> Kuetzing	Harichand -7	-do-
21	<i>Mougeotia laetevirens</i> Wittrock	Harichand -5	<b>Chlorophyceae</b>
22	<i>M. robusta</i> Wittrock	Harichand -5	-do-
23	<i>M. viridis</i> (Kuetz) Wittrock	Khanmai – 4	-do-
24	<i>Stigeoclonium lubricum</i> (Dillw) Kuetzing	Daudzai -3	-do-
25	<i>S. stagnatile</i> (Hazen) Collins	Daudzai -3	-do-
26	<i>S. subsecundum</i> Kuetzing	Harichand -8	-do-
27	<i>S. tenue</i> (Agardh) Kuetzing	Daudzai -3	-do-
28	<i>Rhizoclonium fontanum</i> Kuetzing	Tangi – 9	-do-
29	<i>R. heiroglyphicum</i> (Agardh) Kuetzing	Tangi – 9	-do-
30	<i>Ulothrix. cylindricum</i> Prescott	Harichand -6	-do-
31	<i>U. zonata</i> Kuetzing	Harichand -6	-do-
32	<i>Spirogyra condensata</i> (Vauch.) Kuetzing	Tangi – 9	-do-
33	<i>Mougeotia robusta</i> Wittrock	Harichand -6	-do-
34	<i>Cladophora fracta</i> Kuetzing	Tangi - 9	-do-
35	<i>C. glomerata</i> (Linnaeus) Kuetzing	Tangi - 9	-do-
36	<i>Closterium acerosum</i> Nitzsch	Daudzai -2	-do-
37	<i>C. lanceolatum</i> Kuetzing	Daudzai -2	-do-
38	<i>Microspora quadrata</i> Hazen	Harichand -6	-do-
39	<i>M. stagnorum</i> Lagerheim	Khanmai – 4	-do-
40	<i>M. tumidula</i> Hazen	Khanmai – 4	-do-

*Table 1 Cont'd.....*

41	<i>Pithophora oedogonia</i> (Montagne) Wittrock	Harichand -8	-do-
42	<i>Oscillatoria princes</i> Vaucher	Daudzai -2	<b>Cyanophyceae</b>
43	<i>O. tenuis</i> Gomout	Daudzai -2	-do-
44	<i>Phormidium incrustatum</i> Naegeli	Daudzai -3	-do-
45	<i>P. retzii</i> (Agardh) Gomont	Daudzai -3	-do-
46	<i>Achanthes exilis</i> Kuetzing	Harichand -8	<b>Bacillariophyceae</b>
47	<i>Vaucheria sessilis</i> De Candolle	Khanmai - 4	<b>Xanthophyceae</b>

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