



ALGOLOGY

## SEASONAL VARIATIONS IN ALGAL POPULATION OF AJANTA WATER-FALL

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### Abstract

In order to study the algal population of Ajanta caves water- fall, the visits were made frequently, in different seasons. The algal members were found from different divisions viz. Cyanophyta, Chlorophyta and Bacillariophyta. Cyanophycean members were found in good number as compare to Chlorophyceae and Bacillariophyceae. 12 genera found in Mansoon season 14 genera in winter season and 5 species in summer season, among all three seasons Mansoon season found very usefully for algal growth. At Ajanta caves water-fall *Spirogyra plena* found in maximum growth as compare to others.

**Keywords:** Algae, water-fall

### Introduction

Algae are abundant in water both marine (sea) and fresh water, they are with different coloured pigments like green, blue, and red. They are in unicellular, filamentous or thaloid in form. In Ajanta caves water-fall site fresh rain water occurs in maximum in Mansoon and winter season, due to the hilly region water comes from all the high places and gathered at water-fall site. Availability of water supports to the algal growth and maximum population takes place. Seasonal variation and biodiversity of fresh water algae was reported by several phycologist. Ashtekar and Kamat (1978) extensively worked on Oedogoniaceae and Zygnemataceae of Aurangabad district of Marathwada resion, they also reported a new species of Desmids and also worked on species of Chroococcales and filamentous Maxophyceae of Aurangabad district. Jadhav et al. (2007) studied algal diversity of Salim Ali Lake, Aurangabad. Total 56 species belonged to 39 genera were identified which are belonged to Cyanophyceae Chlorophyceae, Bacillariophyceae and Euglenophyceae. Mansoon season is very useful for the algal growth as compare to winter as well as summer season, to know the actual algal population and dominancy of algal species the present investigation was undertaken to study the seasonal variation.

### Materials and Methods

Samples of 14 algal forms belonging to Cyanophyceae, Chlorophyceae and Bacillariophyceae were collected in mansoon, winter and summer season, from the Ajanta caves water-

fall, India. The samples were carefully collected, cleaned in clean water to remove all the extraneous matter. The acid wash bottles were used for the collection, immediately bottles were transported to the laboratory for the further taxonomic investigation. The collected algal forms were observed under microscope, and identified them by referring to the standard literature on algae (Desikacharya, 1959; Fritch 1935, Pal at al., 1960; Prescott, 1951; Randhawa, 1959; Sarode and Kamat, 1984; Smith, 1950).

### Results and Discussion

At the historic monument Ajanta cave water-fall 14 algal forms were recorded of these 6 belonged to Cynophyceae, 6 to Chlorophyceae and 2 to Bacillariophyceae. Mansoon season was good for the collection all species were found maximum in Mansoon season. Due to scarasity of water the summer season was unfavorable for algal growth. In Cyanophyceae *Spirogyra plena* was not only maximum in both mansoon and winter season but also maximum as compare to all algal samples. The algae *Nitella batrachosperma* and *Oedogonium amplum* were absent in mansoon season but present in winter season. As compare to all species *Oedogonium amplum* was present in very less in growth. In Bacillariophyceae genus *Fragillaria construens* found same in mansoon and winter season but absent in summer season. As compare to all algal species the members of Bacillariophyceae were present in very less in number in all season.

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Table 1. Biodiversity and Seasonal variation in algae at Ajanta caves water-fall

Name of the algae	Monsoon	Winter	Summer
Cyanophyceae			
<i>Apanothece microscopia</i>	++++	+++	+
<i>Lyngbya major</i>	++	++	+
<i>Meristopedia tenuissima</i>	++	++	-
<i>Nostoc muscorum</i>	++	+++	++
<i>Phormidium usterii</i>	+	++	-
<i>Plectonema gracillimum</i>	++	++	++
Chlorophyceae			
<i>Chlorella vulgaris</i>	+	+	-
<i>Cladophora callicoma</i>	++	++	+
<i>Gleocystis major</i>	+	++	-
<i>Nitella batrachosperma</i>	-	+	-
<i>Oedogonium amplum</i>	-	+	-
<i>Spirogyra plena</i>	++++	++++	+
Bacillariophyceae			
<i>Fragilaria construens</i>	++	++	-
<i>Nitzschia palea</i>	+	++	-
Algal diversity	12	14	05

+ Minimum, ++ Moderate, +++ Middle, ++++ Maximum, - Absent

### Conclusion

World heritage historical Ajanta caves are located in Aurangabad district of Maharashtra state (India) where we get rainfall up to 80 to 120 cm. per annum. The Ajanta caves waterfall is famous place on the site. Maximum 14 forms of algae belong to Cyanophyceae, Chlorophyceae and Bacillariophyceae were collected from different season, qualitatively and quantitatively monsoon season favours the growth and reproduction of algal forms on the site.

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