

## Seasonal growth, spore shedding and life cycle of *Porphyra vietnamensis* Tanaka et.Ho.

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### ABSTRACT

*Porphyra vietnamensis* is a seasonal alga occurring in the mid littoral zone of the intertidal rocky surfaces from December to May. Seasonal data were collected on the growth and spore shedding of this alga. In the present study, only 3 g/m<sup>2</sup> biomass was reported in the month of January and February. In addition, less than one gram/m<sup>2</sup> biomass was noticed in the remaining months of the plant growth. Maximum no. of monospores (3x10<sup>5</sup> spores /g.fr. wt/day) and carpospores (2.5x10<sup>5</sup> spores /g.fr. wt/day) were liberated in the month of February. Moderate water temperature and salinity favours the maximum biomass and spore shedding of this alga *P. vietnamensis* at Visakhapatnam. Besides, different phases in the life cycle of the *Porphyra vietnamensis* are also presented in this study.

## **Studies on enviro-ecological status of Kimmaghatta lake of Bangalore, Karnataka**

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### **ABSTRACT**

Present study deals with the physico-chemical characteristic of Kimmaghatta Lake during a period between January 2004 to December 2004. The parameters studied comprised temperature, pH, total hardness, total alkalinity, TDS, electrical conductivity, dissolved oxygen, biological oxygen demand, chemical oxygen demand, nitrates, phosphates, sulphates, iron and potassium.

# **Physico-chemical characteristics and Phytoplankton of Hoskerehalli lake, Bangalore, Karnataka**

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## **ABSTRACT**

The present study was undertaken to investigate physico-chemical characteristic and phytoplankton (particularly Cyanophyceae) of Hoskerehalli lake. Physico-chemical analysis of lake water exhibited richness in nitrate and phosphate which favoured growth of phytoplankton. Dominance of Cyanophyceae in summer and their number gradually declining towards winter revealed distinct seasonal variation.

## **Occurrence of phytoplankton in the lakes in and around Kolhapur City (Maharashtra)**

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### **ABSTRACT**

It is an attempt to study water bodies in and around Kolhapur city. The parameters such as pH, EC, hardness and alkalinity, of the aquatic environment have been studied for 9 sites from which phytoplankton samples were collected. The total number of phytoplankton and filamentous algae goes to 174 species. These species represent Cyanophyceae, Chlorophyceae, Bacillariophyceae, Dianophyceae, Euglenophyceae, Xanthophyceae and Chrysophyceae.

## Algal flora of the freshwater aquatic systems of Mohuda, Orissa

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### ABSTRACT

The present investigation was conducted to study the distribution of microalgae in six freshwater ponds and two major canals of Mohuda, Ganjam district, Orissa. In total 58 species of microalgae were identified including 25 species belonging to 13 genera of Cyanophyceae, 11 species belonging to 10 genera of Chlorophyceae and 22 species belonging to 21 genera of Bacillariophyceae. Rich algal flora is found in ponds rather than in canals. Out of the eight areas, Cyanophyceae were more dominant in pond 4, Chlorophyceae in pond 1 and 4 and Bacillariophyceae in pond 6 while canals were poor in algal diversity. Of all the algal species recorded, *Microcystis aeruginosa* shows common occurrence in ponds and canals, while pond 6 contain only *M. pulverea*. *Sirogonium reticulatum*, a chlorophyte was obtained from pond 4, 6 and two canals. Pond 1 and 6 contain maximum number of Bacillariophytes. The results are discussed with reference to the water parameters.

## Seasonal variation of phytoplankton in relation to physico-chemical characteristics at Perumal lake, Tamilnadu

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### ABSTRACT

Studies were made on the seasonal variation of phytoplankton in the Perumal lake for a period of one year from March 2007 to February 2008. The physico-chemical parameters such as atmospheric temperature, water temperature, pH, salinity, dissolved oxygen, electrical conductivity and total dissolved solids were at the ranges of 30.1-36.5°C, 29.0-34.4°C, 7.9-8.4, 1.2-2.5 mg/l, 2.62-4.34 mg/l, 7.6-9.2 mS and 2.5-5.2 mg/l, respectively. Totally 136 species of phytoplankton belonging to Bacillariophyceae (62 species), Chlorophyceae (39 species), Cyanophyceae (30 species) and Euglenophyceae (5 species) were recorded. Species of *Fragillaria*, *Mastogloia*, *Navicula*, *Cymbella* and *Nitzschia* (Bacillariophyceae); *Chlorella*, *Scenedesmus*, *Pediastrum*, *Closterium* and *Spirogyra* (Chlorophyceae) and *Chroococcus*, *Aphanocapsa*, *Spirulina*, *Oscillatoria*, *Anabaena* and *Nostoc* (Cyanophyceae) were found in all the seasons. The phytoplankton density was high (1705 cells/l) during the summer season and low (760 cells/l) during the winter season. Bacillariophyceae formed the dominant group.

# A review on waters of the Indian desert around Bikaner : Ecology and insect fauna

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## **Introduction**

No life can be imagined without water. It is indispensable and one of the most precious of natural resource on this planet. The desert ecosystem has its own characteristic features, with physical and chemical conditions responsible for the type of biota it holds. Rajasthan (India), especially the north-western part, is known for its dry and hostile nature. Surface waters are poor in both quantity and quality. Rivers in the desert part are ephemeral, but there are a few large, semi artificial lakes, and many tanks. In addition there are ephemeral pools, puddles and ponds in which water may last for few weeks to a few months. Aquatic fauna in Rajasthan has, therefore, gained less attention than terrestrial forms. The average rainfall in the region ranges from 23-27 cm per year and wide diurnal and seasonal variation in temperature ranges from 1°C to 48°C. As is true for any hot desert, the water is the most important limiting factor so far as the survival and distribution of biotic communities in such areas is concerned. The present paper is an effort to review the work done by various workers on the water bodies of this region, taking into account the physical chemical characteristics with special reference to insects.

## **Materials and Methods**

### **The study area**

Bikaner city occupies almost central position in the desert part at 28°N latitude and

73°18' E longitudes. Different bodies of water, in and around Bikaner city, have been investigated, for, their physico-chemical and biological aspects by various workers. In the present paper it has been attempted to review the work done on the insect fauna in relation to the ecology in different bodies of water.

The bodies of water in this region can be classified as village pond, pond in urban surroundings, temple tanks, pucca step well, large holy lake, perennial artificial lake and reservoir. Since most of these water bodies are rainfed and shallow the water level increases during monsoon and is considerably reduced after rains due to evaporation, seepage and uptake for various purposes.

## **Results and Discussion**

### **Physical and Chemical parameters**

#### **Depth**

Barring an artificial lake, Gajner and step well, Phoolnathji Bawari where level of water was reported to be above 3.0m by Jain (1996) and Bahura (1990) respectively, in all other water bodies it ranged from as low as 0.35m in Harsolao pond to 3.0m in the Shivbari temple tank.

#### **Water temperature**

The water temperature showed a wide range (8.80-30.5°C) depending upon the depth, volume of water and physiographic conditions. A high water temperature of 30.5°C was recorded by Sharma (1992) in the waters of Kodamdesar pond and 27°C in Kolayat lake

# Crustacean fauna of the waters in Indian desert around Bikaner : A Review

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## Introduction

Of the various animal groups present in the water, arthropods outnumber the others, as do on land. They are adapted in different ecological niches and subscribe to different aquatic communities like benthic, planktonic, periphytonic, nektonic, and neustonic ones. All classes of this largest group are represented in the aquatic communities, chief being crustaceans and insects.

All crustaceans without exception are aquatic. They often act as primary consumers in both grazing and detritus type of food chain and in turn provide food to higher trophic levels. As such, they are an important link between autotrophs or detritus and carnivore fishes. They also present striking features in periodicity of occurrence, lifecycle and great adaptability to environmental stress. The present paper is an attempt to review the work done on crustaceans in the waters of the Indian desert around Bikaner.

## Material and Methods

### The study area

The city occupies almost central position in the desert part at 28°N and 73°18'E longitudes. As is true for any hot desert, water is the most important limiting factor so far as the survival and distribution of biotic communities in such areas is concerned. The region is dotted with a few but vitally important bodies of water, mostly village

ponds and temple tanks, and a few lakes of perennial nature and some reservoirs. Since most of these water bodies are rainfed and shallow the water level increases during monsoon and is considerably reduced after rains due to evaporation, seepage and uptake for various purposes.

### The fauna from the water bodies of the region

During the past years, different workers studied eight water bodies from this region for the crustacean fauna. Crustaceans were observed to constitute a major group in the water bodies of this region and have been presented in Tables 1,2,3 and discussed in details in the present paper. It was only Harsolao pond where the insects and their larvae were major contributors (97.95%) as reported by Pareek (1997).

## Results and Discussion

Seven species belonging to Anostraca, Cladocera, Copepoda and Ostracoda have been reported by various workers. Of the total arthropod fauna, 79.86% crustaceans were recorded in Kolayat Lake (Sharma, 1998), 99% in Sagar village pond (Garg, 1995), and 81.39% in Gajner pond (Pareek, 1997).

### Branchiopoda

This group has been represented by Anostraca and Cladocera in the water bodies of this region. Only one Anostraca, *Streptocephalus dichotomus*, and four members belonging to Cladocera have been



## **Commercial prospective of seaweeds with special reference to antioxidants and sulphated polysaccharides : potential of India**

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### **ABSTRACT**

Free radicals derived from molecular oxygen and nitrogen are highly reactive metabolites called reactive oxygen species (ROS). Cells continuously produce ROS as part of the metabolic process. Cells also produce antioxidant compounds that scavenge and/or reduce the concentration of ROS. Normally, a balance exists between concentrations of ROS and antioxidant scavenging systems. The disruption of the delicate balance between pro- and antioxidants results in oxidative stress which has been implicated in many pathophysiological states including aging and cancer. The uses of antioxidants have been proven to be beneficial in combating the harmful effects of oxidative stress in many of these diseases. The present review outlines the importance of seaweeds as a potential source of antioxidants and other bioactive compounds.

# **Phytoplankton biodiversity in water bodies of Tahasil Kavathe Mahankal (Sangali District), during post summer period**

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## **ABSTRACT**

An attempt is being made to study lakes/ water bodies in Kavathe Mahankal Tahasil of Sangali district. Six sites, namely, Landagewadi, Kuchi, Kundalapur – Jakhapur, Jakhapur, Raiwadi and Dudhebhavi are selected for the study. The diversity of phytoplankton in six water bodies in month of July, 2009, before the rains is presented. There are 44 species belonging to 30 genera from five classes, viz., Cyanophyceae, Chlorophyceae, Euglenophyceae, Chrysophyceae and Bacillariophyceae.

## **Preliminary testing of botanicals against backswimmers under laboratory conditions**

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### **ABSTRACT**

The relative efficacy of aqueous leaf extracts of botanicals against backswimmer was studied under laboratory conditions during 2008. Preliminary screening of five botanicals viz., adhatoda (*Adhatoda vasika*), neem (*Azadirachtin indica*), karaj (*Pogamia pinnata*), kalmegh (*Andrographis paniculata*) and custard apple (*Annona squamosa*) at 0.5% indicated the superiority of *A.paniculata* as it resulted in high mortality of the notonectids (93.3 -100.0 %) in 6 -18 hours. Leaf extracts of karanj (*P. pinnata*) was considered as next effective botanical. A further testing of kalmegh and karanj at 0.1, 0.3 and 0.5% concentrations also showed the effectiveness of these botanicals in terms backswimmer mortality. As satisfactory control was achieved at lower concentration of 0.3% by both kalmegh (75.0%) and karanj (66.7%) in 48 hrs of exposure, use of aqueous leaf extracts of these botanicals is suggested for the management of backswimmer population ensuring the sustainability of pond ecosystem. However, the effect of kalmegh / karanj aqueous leaf extracts on fish-fry need attention in future experiments for ensuring the safety of its use in hatcheries or in large vessels with fish-fry on transit.

## **Spectoral strength augmentation in koi carp (*Cyprinus carpio*) using *Scenedesmus* sp**

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### **ABSTRACT**

A study conducted to enhance the colour of koi carp incorporating the *Scenedesmus* powder revealed the fact that algae can significantly contribute in this dimension. Apart from that algae can also be useful in the growth enhancement of fishes. This finding can be very useful information to ornamental fish farmers as they are likely to get more price due to better coloration and growth.

## **Containment of *Anabaena* associated foul odor in fish culture**

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### **ABSTRACT**

The blue green alga *Anabaena* sp has been construed to be toxic in fresh water bodies. One such instance has been recorded in a fish culture unit at Livestock Research Station, Kattupakkam. The dominance of *Anabaena* in this organically loaded fish culture system developed musty abhorrent odor in the harvested fish. Application of lime at a rate of 5 kg per 0.2 hectare per day for three consecutive days had resulted not only in total eradication of this species of algae, but also total elimination of this odor in fish making it suitable for consumption. This study recommends an application of lime in blue green infested ponds 10 days before harvest to ensure that fishes are edible.

## Micro Algal Diversity of Kolkata, West Bengal, India

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### ABSTRACT

In the present communication seventy five algal taxa of Kolkata and portions of 24 Parganas (Greater Kolkata) of West Bengal have been reported as an initial step of floristic study and documentation of West-Bengal flora. Out of these, 54 taxa of Cyanophyceae belonging to 18 genera, 17 taxa of Chlorophyceae belonging to 11 genera, 3 species of Euglenophyceae and a single fresh water species of Rhodophyceae are recorded. Only five taxa namely, *Oscillatoria salina*, *Microcoleus chthonoplastes*, *Mastigocoleus testarum*, *Haematococcus lacustris* and *Dunaliella salina* were recorded from the estuarine region of South 24 Parganas. Unialgal cultures were set up in laboratory condition to induce reproductive structures of filamentous green algae for proper identification.

## **A laboratory study of phycoremediation of sugar mill effluent**

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### **ABSTRACT**

Sugar industry is an agro-based industry, playing an important role in the economic development of the country, but the effluent released by the industry creates damage to the freshwater ecosystem. Experiments were carried out to achieve reduction of adverse effects of sugar mill effluent by treatment with algae. The treated effluent used to assess its effect on 1) seed germination 2) survival ability of fish 3) improving soil pH. Different dilutions of the effluent such as 25%, 50%, 75% of raw effluent and the treated effluent were used to assess survival ability of fishes. Seeds were subjected to the same condition like fishes. It was observed fishes survived well in treated effluent when compared to dilutions of the raw effluent. Seeds soaked in treated effluent showed better response than other dilutions of the effluent. Soil with a pH of 5.8 was wetted with treated effluent for more than 2 weeks. pH of the soil rose to 7.2 from 5.8.