Vol 15(1), 2012

Indian Hydrobiology, 15(1) : 1 - 16, 2012

Some Desmids from Western Uttar Pradesh, India

Santosh Kumar Tripathi, Utkarsh Misra and P.K. Misra
Phycology Research Laboratory, Department of Botany, University of Lucknow Lucknow - 226 007, India

ABSTRACT

The present paper deals with eleven genera (with 41spp.) of Class Chlorophyceae (Order-Zygnimetales, Family-Desmidaceae) reported for the first time from different aquatic habitats of Western Uttar Pradesh : Saharanpur, Meerut and Ghaziabad districts. These genera are *Closterium* Nitzsch (6spp.), *Pleurotaenium* Naegeli (1sp.), *Euastrum* Ehrenberg (7spp.), *Staurastrum* Meyen (4spp.), *Cosmarium* Corda ex Ralfs (15spp.), *Micrasterias* C.A. Agardh (5spp.), *Spondylosium* Brebisson (1sp.), *Onychonema* Wallich (1sp.), *Desmidium* C.A. Agardh (1sp.), *Sphaerozosma* Corda (1sp.), *Hyalotheca* Ehrenberg (1sp.).

Indian Hydrobiology, 15(1) : 17 - 41, 2012

Algal diversity in the reservoirs of Odisha state, Ind

S.K. Das and S.P. Adhikary*
Centre forBiotechnology, Institute of Science
Visva-Bharathi, Santiniketan, West Bengal - 731 235
**Corresponding author e-mail : adhikarysp@visva-bharati.ac.in*

ABSTRACT

Algal diversity in seven reservoirs of Odisha state was documented for the first time. A total of seventy five algal taxa comprising of 15 Cyanophytes, 30 Chlorophytes and 30 Heterokontophytes were recorded. This is second documentation of algae from reservoirs of eastern regions of India, the former one being on Cyanophytes from similar waterbody in Midnapore, West Bengal.

Indian Hydrobiology, 15(1) : 42 - 49, 2012

In vitro antivibrio activity, Isolation of phenol compounds and their functional groups of *Phormidium* species

M. Prabakaran, A. Panneerselvam[1] and N. Thajuddin[2]
Sri Gowri Biotech Research Academy, Nagai Road, Thanjavur (Dt.), Tamil Nadu, India
[1]PG and Research Dept. of Botany and Microbiology
A.V.V.M. Sri Pushpam College (Auto), Poondi, Thanjavur (Dt.), Tamil Nadu, India
[2]Bharathidasan University, Dept. of Microbiology, Trichirappalli, Tamil Nadu, India

ABSTRACT

The *in vitro* antimicrobial activity of the marine cyanobacteria was examined against vibrio pathogens. The pyridine and n- butanol extract of *Phormidium angustissimum (SGBRA01) and phormidium sp* exhibited broad spectrum of antivibrio activity. In particular, *Phormidium angustissimum (SGBRA01)* showed strong activity on vibrio pathogens, and these cultures were screened for phytocompounds like alkaloids, phenols, sterols and saponins by TLC. The *Phormidium angustissimum (SGBRA01)* showed only one group of phytocompounds namely phenols. The various functional groups were identified by FT-IR and GC-MS. The results confirm the potential use of cyanobacterial extracts as a source of antibacterial compounds or as a health promoting food for human beings.

Indian Hydrobiology, 15(1) : 50 - 60, 2012

A comparative study on the effect of *Stoechospermum* SLF and *Syringodium* SGLF on the growth and photosynthetic pigments of *Vigna mungo* seedlings

T. Pon Rathi
Department of Botany
Kamaraj College, Tuticorin - 628 001, Tamil Nadu

ABSTRACT

This paper deals with the study of *Stoechospermum* SLF and *Syringodium* SGLF obtained by four different methods of extraction on the growth and photosynthetic pigments of *Vigna mungo* seedlings. Autoclave and alcoholic methods of extraction were found to be the most effective, inducing seedling growth and photosynthetic pigments to maximum level. Both the *Stoechospermum* SLF and *Syringodium* SGLF were found to be more or less equally effective in enhancing the magnitude of the *Vigna mungo* seedling growth parameters.

Indian Hydrobiology, 15(1) : 61 - 70, 2012

A list of Blue-green algae of Alwar (Rajasthan), India - Chroococcales-II

Ritu Jain[1], Pramod Kumar Jain and Pushpa Srivastava[2]
[1]Department of Botany, Kanoria PG Mahila Mahavidyalaya, Jaipur
[2]Department of Botany, University of Rajasthan, Jaipur

ABSTRACT

The present paper reports a further 28 taxa of the order Chroococcales, collected from Alwar of the State of Rajasthan. These include 26 members of the family chroococcaceae and two of Entophysalidaceae. All these are the first reports from this region and some of these are the first report from the State. Most of these are subaerial and a few are aquatic.

Indian Hydrobiology, 15(1) : 71 - 86, 2012

Spirulina (Arthrospira) Biotechnology for Rural Application

N. Jeeji Bai, Beena B. Nair* and V. Shashirekha
Shri AMM Murugappa Chettiar Research Centre, Taramani, Chennai - 600 113
**Author for correspondence*

ABSTRACT

Blue-green algae have traditionally formed part of the diet of various tribal communities in different regions of the world. *Nostoc* and *Spirulina* are still eaten in China and Chad region respectively as a regular food item. *Spirulina* biotechnology of cultivation, its physiology, biochemical constituents, molecular taxonomy and widespread application in human nutrition have formed the topics of a large number of research papers, reviews, symposia and books. Mass culture of *Spirulina* for commercial purposes have become a lucrative proposition in spite of the high investment and constant up-gradation of production mode and quality control measures required in order to be in the market. The cost of product thus remains high and prohibitive for the poor. In order to overcome this problem, the technology has to be simplified. This involves both the scale of operation and the methodology. The pot culture technology was developed to meet the health status of small households initially. This had to be scaled up so that a supplementary income to the village housewife could be generated. A 3-year study with a few beneficiaries with a manageable pond area of 10 or 20 m^2 per person was shown to be a feasible model for further implementation. The women trainees could produce average yields of 10 to 12g m^{-2} d^{-1} of dry *Spirulina* which was comparable to the yields from the nearby pilot facility. This is mainly attributable to the benign handling of cultures in manual mode of operation, which is possible only when the scale is small. The small village household cultures have to be integrated by a central procuring, processing and marketing facility for giving long-term viability to the programme. For 100 village households with a total production area of 1000 m^2 a tentative estimate of annual biomass yield and running cost shows that this project is technically feasible as a village enterprise.

an Hydrobiology, 15(1) : 87 - 89, 2012

Studies on the microchipping activity of bioeroding sponges infesting *Perna indica* Kuriakose and Nair

P. Sunil Kumar* and P.A. Thomas
Central Marine Fisheries Research Institute, Kochi - 682 014
**Assistant, Krishi Vigyan Kendra, Thrissur, E-mail : sukkukumarp06@rediffmail.com*

ABSTRACT

Clionids excavate galleries in calcareous material by relentless removal of small chips of calcium carbonate. The chippings of calcium carbonate particles will go on incessantly even after death of the host; mollusc or coral. In the present study the diameter of chips measured varied from 0.020-0.070 mm in *Cliona vastifica*. The chip size of *Cliona lobata* ranged from 0.029 to 0.076 mm that of *Cliona margaritifera* from 0.037 to 0.075 mm and that of *Cliona carpenteri* from 0.025 to 0.072 mm. In the case of *C. celata* and *Thoosa armata* the diameter of chips ranged from 0.025 to 0.072 mm and 0.020 to 0.075 mm respectively.

Indian Hydrobiology, 15(1) : 90 - 94, 2012

Bioremediation potential of *Spirogyra*, toxicity and biosorption studies on lead (Pb).

N.H. Brahmbhatt[1] and Rinku V. Patel[2]
V.P. and R.P.T.P. Science College, Vallabh Vidyanagar, S.P. University, Gujarat, India
[1]Corresponding author : E-mail : naina_bbhatt@yahoo.co.in
[2]E-mail : rinkuunited@yahoo.com

ABSTRACT

This study examines the possibility of using live *Spirogyra* to biologically remove aqueous lead of low concentration (below 50 mg/l) from wastewater. The *Spirogyra* cells were first immersed for seven days in lead solution of different concentrations. Lead amount was estimated to be 34.916 mg/l after 21 days at 30 ppm in *Spirogyra*. The minimum biosorption capacity of live *Spirogyra* was estimated to be 20.654 mg/l (lead) at 2 ppm of 7 days.

Indian Hydrobiology, 15(1) : 95 - 102, 2012

Effect of UV-B radiation on growth and biochemicals of some seaweeds of Tuticorin coast

V. Sornalakshmi and Venkataraman Kumar
P.G. & Research Department of Plant Biology and Biotechnology
Botany Research Laboratory
V.O. Chidambaram College, Tuticorin - 628 008, Tamil Nadu, India

ABSTRACT

The effect of UV-B radiation was studied on daily growth rate (DGR), chlorophyll, carotenoids, protein, carbohydrate, lipid and phycocolloids (agar, algin and carrageenan) content of six economically important seaweeds, *Ulva lactuca*, *Caulerpa scalpelliformis*, *Padina tetrastromatica*, *Stoechospermum marginatum*, *Gracilaria corticata* and *Acanthophora spicifera*. The seaweeds were exposed to different period of UV-B radiation (15, 30, 45, and 60 minutes).In *Caulerpa scalpelliformis*, chlorophyll a, b, carotenoids, carbohydrate and protein recorded higher values over the control at different durations of UV-B exposure. Similarly, the amount of UV-B absorbing pigments was found to be more than the control in all the four periods of UV-B exposure. Algin from *Padina* and agar from *Gracilaria* was more in almost all the UV-B exposure period. In *Acanthophora spicifera*, DGR and carrageenan content showed enhancement over the control at all the four periods of UV-B exposure.

Indian Hydrobiology, 15(1) : 103 - 108, 2012

A comparative study on the effect of *Gracilaria corticata* SLF by different methods of extraction on *Vigna mungo* seedling

K. Jeba Ananthi, M. Jeevitha and Venkataraman Kumar
P.G & Research Department of Plant Biology and Plant Biotechnology
Botany Research Laboratory
V.O. Chidambaram College, Tuticorin - 628 008, Tamil Nadu, India

ABSTRACT

Four methods of extraction of Seaweeds Liquid Fertilizer (SLF) from *Gracilaria corticata* were employed. The efficacy of each method was tested by assessing the effect of the SLF on the growth parameters and chlorophyll content of the black gram seedlings. The Alcohol-Aqueous method of extraction was found to be most effective because of the SLF obtained by this method induced enhanced magnitude of growth parameters and chlorophyll content of the black gram seedlings.

Indian Hydrobiology, 15(1) : 109 - 113, 2012

Zygnemaceae from Mangrul Dam, Dist. Jalgaon, Maharashtra

S.A. Patil* and A.K. Jawale
P.G. Research Centre, Department of Botany, Dhanaji Nana Mahavidyalaya Faizpur - 425 503, Jalgaon, Maharashtra
**Department of Botany, Sardar Vallabhbhai Patel Arts and Science College Ainpur - 425 507, Dist. Jalgaon, Maharashtra*
Corresponding author : sap161972@rediffmail.com

ABSTRACT

Fifteen taxa of Zygnemaceae belong to *Mougeotia*, *Zygnema* and *Spirogyra* were collected from Mangrul dam, Dist. Jalgaon, Maharashtra. The present paper deals with the description of 9 taxa. Of which *Zygnema pateli* is a new species, *Mougeotia corniculata*, *Zygnema cyanosporum*, *Spirogyra gaterslebensis* and *S. semiornata* are reported for the first time from India and *Zygnema indicum*, *Spirogyra distenta*, *S. mirabilis* and *S. velata* are new to Maharashtra.

n Hydrobiology, 15(1) : 114 - 119, 2012

Studies on diversity of microalgae on pneumatophores and surrounding waters of *Avicennia officinalis* L.

K. Sanoj, C.T. Chandralekha and Jose John*
Graduate Department of Botany, Devamatha College, Kuravilangad, Kottayam, Kerala
**Department of Botany, K.E. College, Mannanam, Kottayam, Kerala*

ABSTRACT

Mangroves are salt-tolerant plants of tropical and subtropical intertidal regions of the world. They are highly productive but extremely sensitive and fragile. In addition to mangroves, the ecosystem also harbours other plant and animal species. The present study is an attempt to enumerate the diversity of microalgae harbouring in the pneumatophores of *Avicennia officinalis* L. from Thalassery, Mangalavanam and Ayiramthengu, the mangrove areas of Kerala. 22 species of epiphytic algae on the pneumatophore belonging to Chlorophyta, Bacillariophyta, Rhodophyta and Cyanophyta have been identified. Mangalavanam area showed the highest diversity of algal flora.

Indian Hydrobiology, 15(1) : 120 - 127, 2012

Hydrological investigation on Manakudy estuary, with special reference to various environmental problems

T. Kannappan[1] and M. Shunmugavelu[2]
[1]Department of Zoology, Arignar Anna Government Arts College Villupuram - 605 602, Tamil Nadu
[2]P.G. Department of Zoology, Vivekananda College, Madurai - 625 217

ABSTRACT

Manakudy estuary, Southwest coast of India, has an area about 150 ha. and is situated about 8 kilometres northwest of Kanyakumari. It is the confluence of River Pazhayar, which has its origin form the Western Ghats. The estuary is connected to the sea during the rainy seasons, and remains land locked for the rest of the year by a sand bar. In the present paper the physico-chemical characteristics of Manakudy estuary investigated during February 2010 to January 2011 are presented. Four different stations were selected for the monthly collection of water samples. The variation in physic-chemical parameters were recorded, these are discussed.

Indian Hydrobiology, 15(1) : 128 - 133, 2012

A Study on plankton population of a temporary pond in Alapuzha district, Kerala in relation to physico-chemical characteristics

Sawmiya Udayan, R. Bindu and S. Sheeba
Sree Narayanan College, Kollam - 691 001, Kerala
E-mail : usawmiya@gmail.com

ABSTRACT

The physico-chemical parameters of water were evaluated and the qualitative and quantitative analysis of phytoplankton and zooplankton were carried out in a temporary pond located in Oachira, Alapuzha District, Kerala during October 2006 to March 2007. The study revealed that most of the physico-chemical parameters are within permissible limits. The present study is an attempt to shed light on the fishing potentialities of temporary ponds in Kerala.