

A FRESHWATER SPONGE *EUNAPIUS CARTERI* (BOWERBANK, 1863)
FROM INDIRA SAGAR LAKE, HYDERABAD,
ANDHRA PRADESH, INDIA.

RAMAKRISHNA

Zoological Survey of India
Freshwater Biological Station
Ashoknagar, Hyderabad.

INTRODUCTION

Sponges are generally subject to great seasonal, geographic and habitat variability. Much reliability cannot be bestowed on the shape and structure of the spicules for taxonomic purposes, as they are frequently subjected to variations as a result of environmental influences and habitat adaptability. This subjectivity to environmental influences calls for an environmental study for a really valid taxonomic assessment, such as physico-chemical parameters, biochemical patterns and scanning electronic micrography (Soota pers. com.). With this view in mind, studies on the freshwater sponges of Hyderabad and around are initiated, to assess the role of environmental factors influencing the distribution of freshwater sponges. As a first step, the collection made from a freshwater oligotrophic lake, in the environs of Hyderabad and a brief description of its hydrobiological characters are given in the present communication. A perusal on the literature of the freshwater sponges from Indian sub-continent is mainly from the work of Annandale (1911), Penney and Racek (1968), Soota and Pattanayak (1982), Soota *et al.* (1983), Soota (1987, 1991).

SYSTEMATIC ACCOUNT

Phylum : PORIFERA
Class : DAEMOSPONGIAE
Order : HAPLOSCLERIDA
Family : SPONGILLIDAE
Genus : *Eunapius* Gray 1867

Eunapius carteri (Bowerbank, 1863)

Spongilla carteri Bowerbank, 1863

Spongilla carteri var *cava* Annandale, 1911., p. 88

Spongilla carteri var *lobosa* Annandale 1911., p. 89.

Spongilla carteri var *mollis* Annandale, 1911., p. 88

Spongilla carteri var *balatonensis* 1923., p. 79

Material : Preserved specimen, ZSI, FBS, Hyderabad.

Collector : Ramakrishna

Locality : Indira sagar lake, Hyderabad East, Rangareddy District, 515m msl.

DESCRIPTION

Sponges fragile in dried condition, forming crust of several centimeter thickness on the boulders and rocks located 3—5m deep. On the littoral regions, present on the macrophytic vegetation and appears as bulbous. Sponge body on the rocks forms an irregular mass, with rough outer surface, oscula opening on the distal part of the body. Sponge body generally found submerged, however, exposed when the level of the water drops during the lean season. Sponge exhibits bright green colour, due to the presence of symbiotic algae, such symbiotic relationship is known in many species.

Dermal membrane well developed, skeleton consists of vertical fibres interconnected by varying number of irregular transverse fibres, megascleres stout fusiform, microscleres completely absent, gemmoscleres similar to that of megascleres, scattered throughout, pneumatic layer thick with air spaces, embedded irregularly.

ECOLOGICAL CHARACTERS

Indira sagar lake located in the semi-arid region of Andhra Pradesh. No factor has so much moulding effect both directly and indirectly, as temperature. In tropics, temperature is one of the major factor affecting the water level of the lake, in addition to evapo-transpiration. This factor has an indirect bearing on the growth and gemmule formation in the sponge body. The period of growth is generally found to be related to the abundant supply of phyto-zooplankton and increase in the water level. The phytoplankton in the lake are mainly of cyanophycean members (*Merismopedia*, *Microcystis*, *Oscillatoria*); Chlorophyceae (*Hydrodictyon reticulatum*, *Pediastrum simplex*, *Ankistrodesmus falcatus*, *Scenedesmus quadricauda*, *Selenastrum*, *Spirogyra hyalina*, *Cosmarium*, *Chara* etc.) and Bacillario phyceae (*Navicula*, *Cymbella*, *Asterionella*, *Synedra*, *Melosira*, *Pinnularia*) and the zooplankton members belonging to Rotifera (*Keratella tropica*, *Filinea longiseta*, *Brachionus quadridentata*); Cladocera (*Moina micrura*, *Ceriodaphnia cornuta*) and Copepoda (*Mesocyclops leuckartii*, *Pseudodiaptomus* sp.). The other factor that are likely to affect the general condition of the lake water quality are as described below :

Data on certain hydrobiological factors of Indira sagar

Parameters	Summer	Monsoon	Winter
Water Temperature (°C)	28.00	26.30	27.6
pH	8.08	7.95	8.12
Free Carbondioxide	Nil	Nil	Nil
Alkalinity	153	237	348
Calcium	37.25	66.00	63.50
Magnesium	56.00	54.00	60.00
Hardness	116.5	122.00	125.00
Dissolved oxygen	5.25	6.10	7.00
Chloride	131.50	88.00	80.00
Specific conductance (U mho/cm)	820.00	650.00	644.00
Total Dissolved solids	524.00	415.00	412.00

(Values are in mg/l, except otherwise mentioned)

The species diversity of sponges in the freshwaters of South India are limited (Annandale 1911), the reason for such limited distribution is not known. Further study on the distribution of sponges from South India, with knowledge of limnology of the lakes may throw light on this aspect.

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