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WATER POLLUTION ALGAE IN GODAVARI RIVER, NASHIK (MH)

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ABSTRACT:-

Algae as indicators of organic pollution in Godavari River have been studied. It was noted that several planktonic algae were present in the Godavari River.Godavari River shows variety of rich algal forms of various taxonomic groups in its abundant fresh water ecosystem, biodiversity studies of the free floating algae found at the onset of winter and summer season at the Godavari River reveals abundance of member of class- Cyanophyceae, and Chlorophyceae. The blue green and green algae showed that all river ranged between moderate and high organic pollution. Species of Oscillotoria, Euglena and Scenedesmus were the most tolerant species. Algae were highly observed 4 lacation of Godavari River i.e.Shomeshwar, ChopadaLons, Ram Kundand Nandurgaonwere the most hospitable sites for growth of algae.

KEYWORDS*: Algae, Bascillariophyata, Cyanophyta,Chlorophyta, Godavari River, Nashik*

INTRODUCTION

During the study, a large number of phytoplanktons like *Cosmarium, Closterium, Actinastrum, Euastrumm, Coelastrum, Staurastrum, Pediastrum, Scenedesmus*and*Spirulina* were observed. For the present study, different locations of the Godavari Riverwere selected. The water samples from each locality were collected once in a month in the morning between 8.00 a.m. to 11.00 a.m. The collections were made for 2 year during 2017-2018, during the months of November to March. For phytoplankton analysis, water samples were collected by plankton net, as per the method adopted by Narkhede (2006). 20 liters of surface water was collected (by standing in the back water of dam at about 100-120 cm depth) by dipping a jug and filtered through the plankton net and was collected in 1 lit. Wide mouth bottle. 30 ml of water sample was preserved in 4% formalin.Pollution of surface water has become one of the most important environmental problems. It is a well-known fact that polluted water can reduce water quality thus restricting use of water bodies for many purposes. Organic pollution could negatively affect the water quality in many ways. Organic effluents also frequently contain large quantities of suspended solid which reduce the light available to

photosynthetic organisms mainly algae.Identification of taxa was done using Fritsch (1935), Patel and George (1977), Philipose (1967), Prescott (1951), Rath and Adhikari (2005) and other relevant literature.

Sampling stations: Sampling for algae was done from Godavari River are situated in Nashik a distance of 5 kms apart. The Sample collection is done in different location of Godavari River are Someshwar, ChopadaLons, Ramkund and NandurVillege.

Algae and water pollution:-

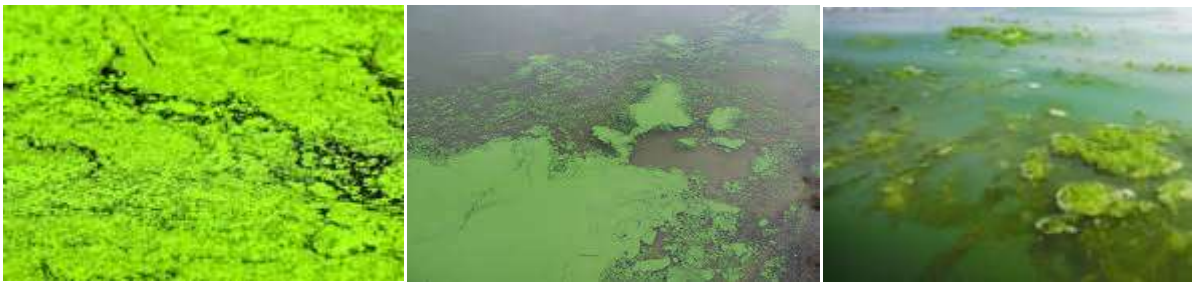
Algae are the main the primary producers in all kinds of water bodies and they are involved in water pollution as well as primary food of aquatic animals. Firstly, enrichments of the algal nutrients in water through organic effluents may selectively stimulate the growth of algal species producing massive surface of Godavari River growths or 'blooms' that in turn reduce the water quality and affect its use. However, blue greenand other some algaeflourished in water polluted with organic wastes play an important part of water bodies. In fact, algae can play significant part of food chain of aquatic life, thus whatever alters the number and kinds of algae strongly affects all organisms in the chain including zooplankton and fish. Algae are also known to be causes to change the colour, tastes and odours in water. Certain diatoms, blue-green algae and coloured flagellates are the best known algae to pose such problems in water supplies, but green algae may also be involved.

Algae as bio-indicators:-

Although indicator organisms can be any biological species that defines a trait or characteristics of the environment, algae are known to be good indicators of pollution. Many blue-green algae occur in nutrient-poor waters, while so many algal species grow well in organically polluted waters. The ecosystem approach to water quality assessment also includes blue green algae and diatom species and associations used as indicators of organic pollution. The downstream of Godavari River margin of the heavily polluted part of a river, *Oscilatoria, Lygbia*, *Nitzschia*and *Gomphonema*always appear to be dominant. *Navicula, Pinnularia,* is stressed to be a good indicator of sewage/organic pollution as the species comfortably occur in the most heavily polluted zones in which other species cannot occur. The *Gleocapsa, Aphanocapsa*, *Gomphonema* which is commonly found in highly organically polluted water. Gyrosigmais also introduced as good examples of diatoms to be affected by high organic content of water. A list of more than 10 algal taxa was published based on the reports of considerable number of authors. Green algae Euglena, diatoms, *Navicula, Synedra* and blue- green algae *Oscillatoria* and *Lygba* are emphasized to tolerate organic pollution. At

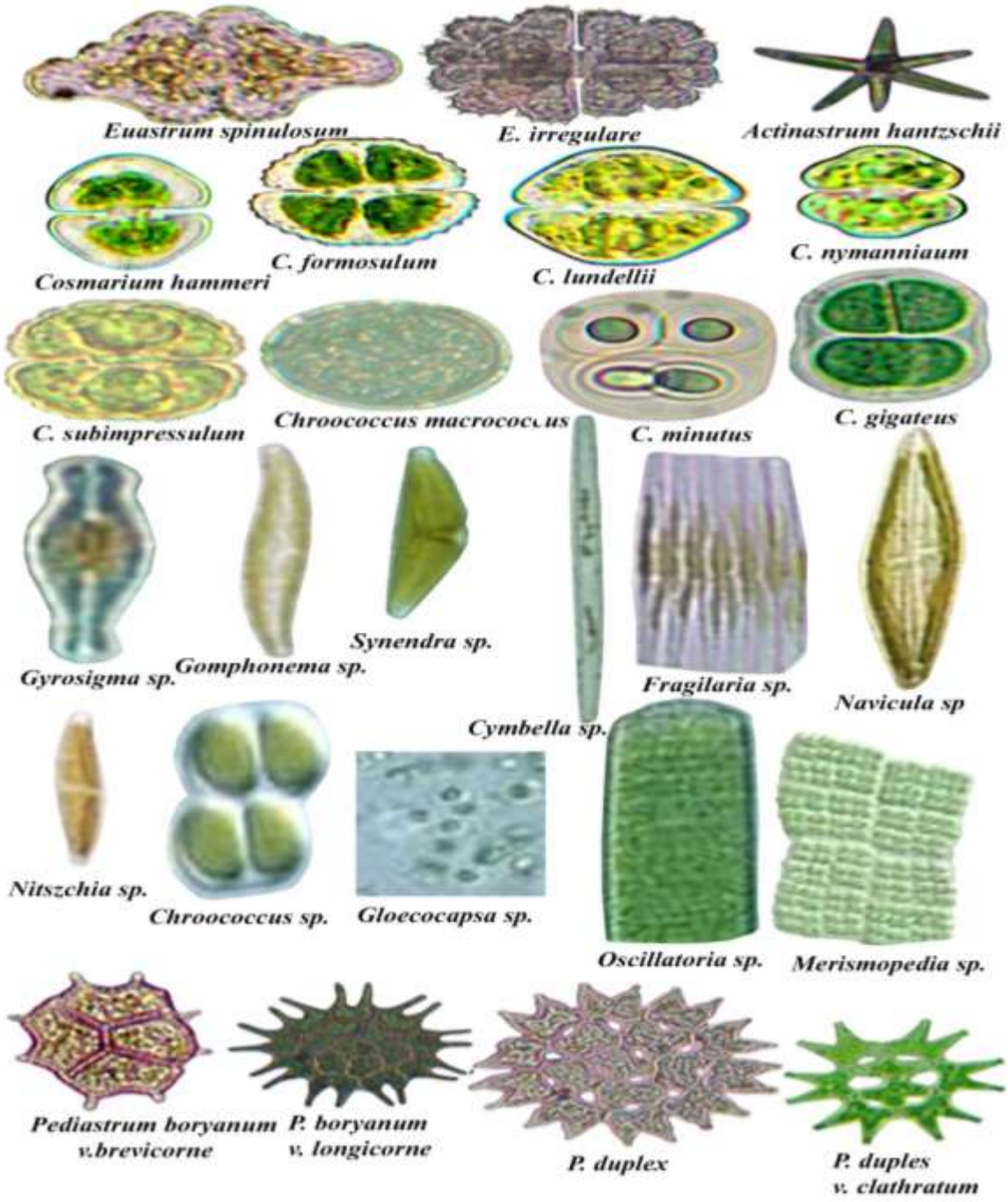
species level, *Euglena* (Euglenophyta), *Nitzschia* (Bacillariophyta), *Oscillatorialimosa, O.tenuis, O.princeps*and*Phormidiumuncinatum* (Cyanophyta) are reported to be present than any other species in Algae are also good indicators of clean water since many species occur insistently and predominately in the clean water zone of the streams of Godavari River. However it is emphasized that minute flagellates are better indicators of clean water than many larger algae. A few of the clean water algae are planktonic whilst many are benthic, attached to substrata at the bottom or sides of the running waters. The absence of blue-green algae was also accepted an indication of clean water.

Photo of Godavari River in Nashik City:-



1. Near to Someshwar Temple 2. Near to Chopadalons3) NandurVillege

PLATE OF ALGAE



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