ABSTRACTS: A Mahakali dam, a fresh water reservoir situated within the Wardha District of Maharashtra State (India). Water from this lake is utilized for irrigation purpose and to certain extent for drinking purpose. The present study reveals the Physico chemical parameters of these reservoir and distribution of planktonic population in them, that was evaluated by standard procedures, and by culture media. In order to identify the biodiversity of this reservoirs, the micro image projection system were used. In the present investigation, total 37 number of algal species which belonging to Chlorophyceae, they were Oedogonium sp., Mougeotia sp., Chlorella regularis, Cosmarium reniforme, Cosmarium contractum, Cosmarium depressum, Cosmarium supergranatum, Cosmarium turpinii, Cosmarium subcucumis, Cosmarium botrytis, Closterium moniliforme, Closterium acutum, Closterium pronum, Hydrodictyon reticulatum, Pediastrum biconutatum, Pediastrum boryanum, Pediastrum simplex, Pithophora sp., Volvox sp., Eudorina sp., Spirogyra sp., Scenedesmus obliquus, Scenedesmus bijuga, Scenedesmus acuminata, Scenedesmus quadricauda, Scenedesmus dimorphus, Scenedesmus opolensis, Coleochaete sp., Staurastrum natar. Staurastrum gracile, Staurastrum orbiculare, , Pseudostauroastrum lobulatum, Planktothrix gelatinosa, Quadrigula clustroides, Crucigenia tetrapedia, and Euastrum amplum ace. 24-number of species which belongs to Bacillariophyceae and they were Navicula radiosa, Navicula gregaria, Navicula cryptcephala, Navicula rhynocophala, Pinnularia nobilis, Pinnularia major, Pinnularia acrosphaeri, Pinnularia interrupta, Pinnularia trevelyana, Pinnularia actinosphaerium, Actinosphaerium sp. (Pinnularia), Amphiura pellecida, Staurogotes anceps, Epithemia zebra, Hantzschia amphioxys, Gyrosigma sp., Tabellaria fenestrata sp., Melosira variance, Synedra sp., Amphora ovalis, Fragilariella construens, Gomphonema affine, Conocephalis and Cyclotella meneghiniana. 01 species of Xanthophyceae i.e. Chlorobotrya regularis and 01 species of Euglenophyceae, and 09-species of Cyanophyceae were identified and they were Anabaena cyanothecae, Nostoc commune, Spirulina subtilissima, Spirulina lavisissima forma major. f. n. (orig.), Phormidium sp., Merismopedia punctata, Gloeocapsa puctata, Gloeocapsa samoensis, Scytonema sp., Spirulina ages. The species of Pediastrum and Scenedesmus were most frequent among Chlorophyceae. The Bacillariophyceae members were dominated by Pinnularia and Navicula. Among Cyanophyceae Nostoc, Anabena, Oscillatoria were abundant. Desmids were represented by a large Number of Cosmarium and Closterium sp.

Since this reservoir are rich in various algal species, it should be protected as a natural wealth. It can be done by through the application of protective measures through regular removal of algal blooms which are of no use, aquatic weeds of which are of succession habit and of no use and regular algicide applications, that will facilitates the growth of other algae too and helps in maintaining the reservoir.

Key Words: Bio-diversity, Fresh Water Algae, Reservoirs, Wardha, India

INTRODUCTION:

Algae are the important part in the food web and provide shelter to other organisms. Thus they are the major part in aquatic ecosystem. Algae grow in different habitat and in different location but it is generally cosmopolitan in distribution and grow almost everywhere in the World. They play a crucial role in the aquatic ecosystem to absorb nutrients, toxic material, heavy metals and convert it into simplest form. There is no easy definition of an alga. Algae are generally single celled to multi-cellular microscopic organism, and it is thought to be simple aquatic plants, which do not have roots, stems, or leaves and have primitive methods of reproduction. They fix the carbon dioxide from air and release valuable oxygen for the living organism. However, some algae display primitive animal features such as motility, while blue green algae differ markedly from plants and all other algae, in that they have a cellular structure and function, that is more common to bacteria called cyano-bacteria in the plant kingdom.

Algae live in a wide range of aquatic environments and are a natural component of the most aquatic ecosystems. They occurs in the lentic (standing water) as well as lotic water (running water), many of them terrestrial which lives in soil and snow or in association with other organisms, plants(cycas, anthoceros), especially fungi (as lichens) and animals. Aquatic algae are found in both fresh and marine waters, their range from large size (kelp) to those visible only under a microscope. Some algae have an economic importance because they are a source of carotene, glycerol, and alginates and can be converted into a food source for aquaculture. They vary considerably in sizes, shapes, and growth forms. They can be single celled, either colonial or as filamentous cells. They prefers the habitat like free floating in the water column (Planktonic). These comprises the microscopic unicellular, colonial and filamentous forms known as “Phytoplankton”. Growing as a films on rocks at the bottom (benthic). These may be single celled or small, colonial and filamentous species growing out into the water column but attached to a substrate at one point. These comprise the larger filamentous algae and macro algae (e.g. seaweeds). The main groups of algae found in freshwater are green algae, diatoms, desmids, euglenoids, Cyanophycean members like Gloeocapsa, Microcystis, Nostoc, Anabena, Spirulina, Rivularia, Gloeotrichia, Lingbya, Oscillatoria, Scytonema, Stigonema. Chlorophycean members, like Chlamydomonas, Pandorina, Eudorina, Pledorina, Volvox, Chlorella, Pediastrum, Hydrodictyon, Ulothrix, Enteromorpha, Zygnema, Spirogyra, Mougeotia, Closterium, and Cosmarium, and Bacillariophycean members present like Pinnularia, Navicula, and Amphiplura etc. These have been connected directly or indirectly with human beings as a source of food, fodder and manure. Other countries of the world are actively engaged in exploring ways to exploit algae as a potent source of food to combat the problems of rapidly growing world population and also as a possible source of food in space flight.

Antibiotics like chlorellin are extracted from Chlorella. Chlorellin is a crystalline substance which...
decomposed by heating at 120 °C. From its chemical composition it is seem to be a mixture of fatty acids. Chlorellin is active against Staphylococcus aureus, a common organism which causes the infections to wounds and particularly useful in the purification of sewage effluent.

The presence of specific nutrients, heavy metals toxic effluents on which specific type of algae grows. Plants hormone like the Auxins (IAA) have been found in the filtrate from the culture of chlorella. In our locality a fresh water body called the Mahakali dam, which is located 30 Km away from Wardha city. The water of dam is mainly used for agriculture and in some extent for drinking purposes of Wild animals and Human beings.

Such water body of great importance if we study, the algal flora of this reservoir can be known, the algal bio-diversity can be known to the peoples and may be the heritage of future generation. Hence, it is a need of hour to know each and every thing of this plant world. For this cause, we have undertaken this investigation for our research study.


**MATERIALS AND METHODS:**

The experiment was conducted in the year 2011-12. For this study, we have under taken a water reservoirs- Mahakali dam of Wardha District, Maharashtra, India. The analysis of samples were carried out at Deptt. Of Botany, J. B. College of Science, Wardha. Mahakali dam is comes under the dry tropical weather climate and average rainfall were 1100mm. Max temperature were 47.9°C and Min temperature were 10.2°C. Present study site is belongs to Wardha district which is at an elevation of 234 meter (767 feet) and at the longitude of 78.61° East and latitude of 20.71° North (North eastern side of the state). Wardha district is a typical seasonal monsoon. Where peoples are engaged in agriculture. Phytoplanktonic diversity was collected from water samples of identified station of this reservoirs at a depth of more than one feet by employing polythene cans of two liter capacity. Algal material were preserved in 3-4% formalin at the spots in
bottles and small vials. Then the samples were washed with 2-3% Acetic acid in order to clear the algal material from organic matter, sand and silt particles. A common method of obtaining pure culture is serial dilution. Cultivators dilute a wild sample or a lab sample containing the desired algae with filtered water and introduce small growing containers contain a single cell of the desired species. Following a suitable period on a light table, cultivators again use the microscope to identify containers to start larger cultures. Same procedure was applied for this study.

To identify the algal material it was stained with 1% iodine solution and examined under research microscope, the photography was made with the help of micro image projection system (MIPS) and identified by comparing with that of available literature like floras of different authors, The structure and reproduction of the algae F.E. Fritch., text book on algae J.S. Gupta., A text book on algae Kumar H.D. and H.N. Singh., A text book on algae N.D. Kamat., A text book on algae A.V.S.S. Sambamurty., Algae (Form and Function) G.S. Venkataraman, S.K. Goyal, B.D. Kaushik, Paromita Roychoudhury., Introduction to the algae Harold C. Bold, Michael J. Wynne., Cyano phyta T.V. Desikachary., The blue greens Arnold Heinemann., Fresh Water Algae of East India by William Barwell Turner. The Biology of the Algae F.E. Round., and Different Journals, research papers.

Observation table:-
Physico chemical parameters of water samples of Mahakali Lake in Wardha city during the study period.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>pH</th>
<th>Temperature</th>
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<tbody>
<tr>
<td></td>
<td>6.54</td>
<td>21°C Celcius</td>
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</tbody>
</table>

RESULT AND DISCUSSION:

From table it was noticed that the pH = 6.54 and Temperature 21°C Celcius.

From the above observation it was observed that the lake have a collection of so many algal genera of different classes. It was reported that genus Anabaena, Nostoc, Spirulina, Phormidium, Merismopedia and 2-species of Spirulina, namely Spirulina subtilissima, Spirulina laxissima forma major: f. n. (orig.), that belongs to class Cyanophyta with 7-number of species. Genus Oedogonium, Mougeotia, Chlorella, Hydrodictyon, Pithophora Volvox, Eudorina Spirogyra, Coleochaete, Planctosphaeria, Quadrigula, Crucigenia, 10-species of Cosmarium, 3 species of Pediasstrum, 6-species of Scenedesmus, and 3 species of Stauroastrum, that belongs to the class Chlorophyta with total 22 number of species. Genus Amphiplora, Stauroonis, Epithemia, Hantzschia, Gyrospigma, Tabellaria fenestrata, Melosira, Synedra, Anphora, 4-species of Navicula, and 6-species of Pinnularia, that belongs to class Bacillariophyceae with total 14-number of species. A single genus Chlorobotrys that belong to class Xanthophyceae, and single Euglena sp., which is a member of Euglenophyceae. The pond also show the presence of various algal blooms and various algal forms. These algal forms belong to the class chlorophyta. Such type of algal forms. These results were in conformity with Anilkumar S., "Fresh water Algae of Hassan District, Karnataka state", and Ratha, S.K., K. Naik and S.B. Padhi 2003, “Epiphytic algal diversity associated with different aquatic macrophytes of fresh water ponds in and around Barhampur University campus, Orissa, India”

CONCLUSION:

From the above results, it was concluded that the pond had a diversified algal flora in which 22-Chlorophycean members was more dominant in dam area followed by 14-members of Bacillariophyceae, 7-members of Cyanophyceae, and 01-members of Xanthophyceae and 01-members of Euglenophyceae.

REFERENCES:


community in the Sagar lake and Military Engineering lake”.


