Innovative Trends In Biological Science

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CHAPTER

23

BIODIVERSITY OF BACILLARIOPHYCEAE FROM THOSEGHAR, SATARA DISTRICT (MAHARASHTRA)

Manjusha Ingawale

Abstract

Present paper deals with study of some members of Bacillariophyceae collected from water bodies of Thoseghar, Satara district. Thoseghar is a small village 20 Km from Satara city at the edge of the Kokan region in Western Maharashtra. It is famous for waterfall. There are a series of waterfalls. Some of them 15 to 20 meters and one of 500 meters in height. This study has shown presence of sixty diatoms belonging to two orders Centrales and Pennales. These species belong to nineteen genera namely Cyclotella, Achnanthes, Fragilaria, Synedra, Pinnularia, Navicula, Gomphonema, Eunotia, Hantzschia, Nitzschia, Cymbella, Bacillaria, Frustulia, Craticula, Diatoma, Ulnaria, Caloneis, Luticola and Surirella. Among these diatoms Gomphonema and Eunotia showed their dominance. These diatoms are being reported for the first time from the study area.

Keywords: *Diatoms, Bacillariophyceae, Thoseghar, Satara.*

Introduction

Diatoms are a major group of algae and are one of the most common types of phytoplankton. These unicellular organisms belonging to class Bacillariophyceae and are often found clinging in great numbers to filamentous algae or forming gelatinous masses on various submerged plants. These are frequently present as a brown, slippery coating on submerged stones, sticks and may be seen to streams of river. A systematic account on diatoms in India was initiated early in the twentieth century. However, studies on diatoms in Maharashtra, though scanty, were initiated in the middle of twentieth century. Earlier workers made collections from different corners of the state and concentrated mainly on the taxonomy of diatoms. Since Satara district is unexplored regarding taxonomy of diatoms this attempt has been made to explore the Bacillariophycean algae from Thoseghar, Satara district

Study Area

Thoseghar is a small village 20 Km from Satara city at the edge of the Kokan region in Western Maharashtra. It is located at 170 35' 47.84" N latitudes and 730 50' 44.98" E and is 3000 feet above sea level. It is famous for waterfall. There are a series of waterfalls. Some of them 15 to 20 meters and one of 500 meters in height is one of the best attractions. The samples were collected from pond, streams, and waterfalls from Thoseghar.

Materials and Methods

Samples were collected from various aquatic environments like waterfalls, ponds, streams etc. within Thoseghar Satara district with help of planktonic net in the plastic bottles. Samples were cleaned by following protocols suggested by Brun. Cleaned diatoms were preserved in 4% formaldehyde solution. Identification of taxa was done with the help of standard monograph literature. (Sarode and Kamat 1984, Gandhi. H.P. 1998, Karthick B.2013)

OBSERVATIONS

Following species were identified from the samples collected from study region.

Plate-1

1. *Cyclotella antiqua v. minor Suxena & Venkateswarlu*
2. *Cyclotella meneghiniana Kützing*
3. *Fragilaria intermedia Grunow*
4. *Fragilaria construens (Ehrenberg) Grunow*
5. *Eunotia valida Hustedt*
6. *Eunotia fallax v. gracillima f. densestriata Gonzalves et Gandhi*
7. *Eunotia pectinalis. v. minor f. impressa (Ehrenberg) Hustedt*
8. *Eunotia major (W. Smith) Rabh*
9. *Hantzschia amphioxys (Ehrenberg) Grunow.*
10. *Habtzschia voigtii Gandhi.*
11. *Hantzschia virgata (Roper) Grunow.*
12. *Eunotia psudoparallela Ao Berg*
13. *.Eunotia gandhi Sarode et Kamat*
14. *Eunotia parallela Ehrenberg*
15. *.Eunotia incisa Gregory*
16. *.Eunotia pectinalis v. ventralis (Ehrenberg)*
17. *Eunotia pseudopectinalis f. robusta Gonzalves et Gandhi*
18. *Eunnotia tschirchiana O. Muell*
19. *Bacillaria paradoxa Gmelin*

Plate-2

1. *Pinnularia laterea Krammer*
2. *Pinnularia simplex Gandhi*
3. *Pinnularia amabilis krammer*
4. *Pinnularia acrosphaeria W. Smith*
5. *Gomphonema dharwarensis Kützing*
6. *Gomphonema montanum v. acuminatum Mayer*
7. *Gomphonema gracile Lange – Bertalot and Reichardt*
8. *Gomphonema gracile. v. subcapitata Gandhi*
9. *Gomphonema affine Kützing*
10. *Gomphonema lanceolatum Ehrenberg*

11. *Gomphonema subtile Ehrenberg*
12. *Gomphonema lacusrankaloides Gandhi*
13. *Frustulia jogensis Gandhi*
14. *Frustulia saxonica Rabh*
15. *Navicula rhynchocephala v. grunowii A. Cl.*
16. *Cymbella aspera (Ehrenberg) Cleve*
17. *Gomphonema intricatum. v. vibrio (Ehrenberg.) Cleve*
18. *Craticula cuspidata (Kutzing) Mann*
19. *Navicula reinhardtii.f. gracilior Grunow*
20. *Pinnularia brevicostata v.indica Gandhi*
21. *Surirella angusta Kützing*

Plate-3

1. *Ulnaria ulna (Nitzsch) Compere*
2. *Synedra ulna v. obtusa (W. Smith)*
3. *Synedra ulna v. danica (Kützing) Grunow*
4. *Diatoma vulgaris Bory*
5. *Synedra ulna Ehr. v.subaequalis Grunow*
6. *Synedra tenera W. Smith*
7. *Achnanthes gibberula v. genuine A. Cl*
8. *Caloneis silicula (Ehrenberg) Cleve*
9. *Nitzschia lorenziana v. subtilis Grunow*
10. *Nitzschia obtusa W. Smith*
11. *Cymbella lanceolata (Ehrenberg)*
12. *Cymbella hungarica v. signata (Pant) A. Cl.*
13. *Gomphonema gracile v. lanceolata (Grunow) Cleve*
14. *Luticola mutica (Kutz) D. G. Mann*
15. *Nitzschia frustulum (Kützing) Grunow*
16. *Gomphonema gracile v. major Grunow*
17. *Achnanthes minutissima Kützing*
18. *Achnanthes biasolettiana Grunow*
19. *Gomphonema spiculoides Gandhi*
20. *Gomphonema montanum v. acuminatum Mayer*

PLATE-1

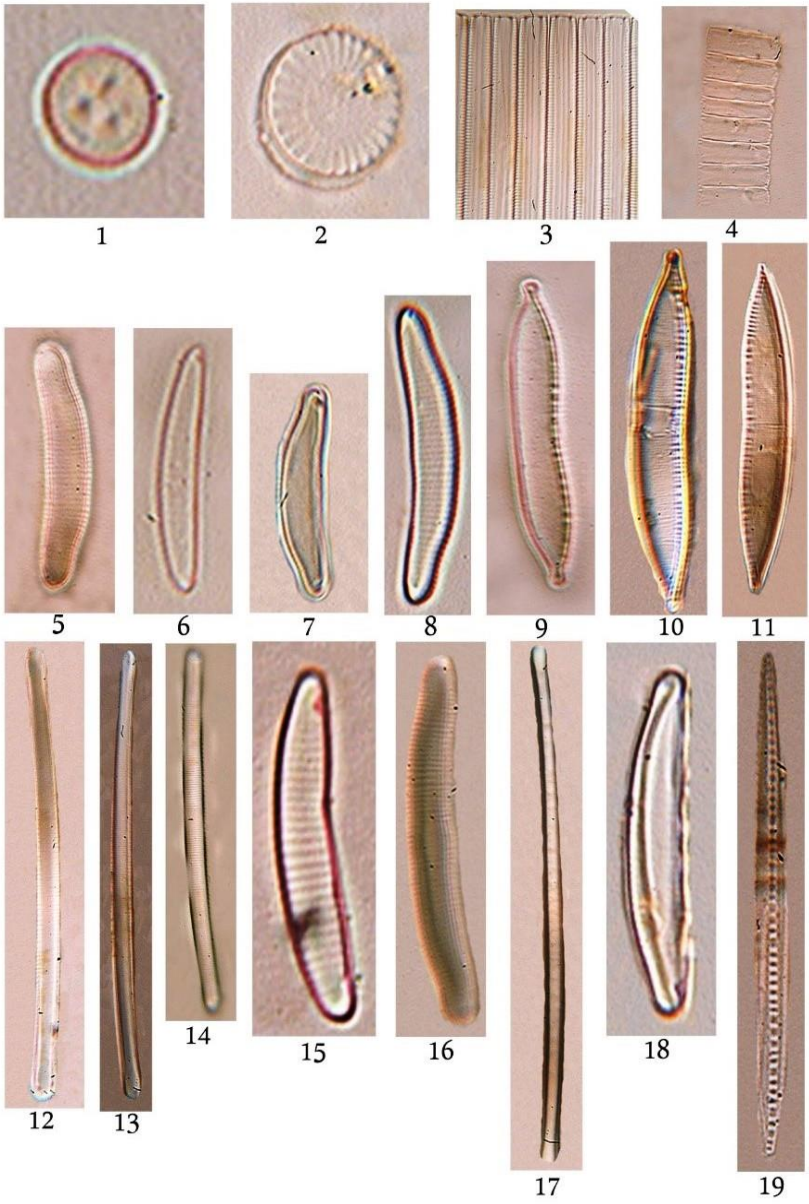


PLATE-2

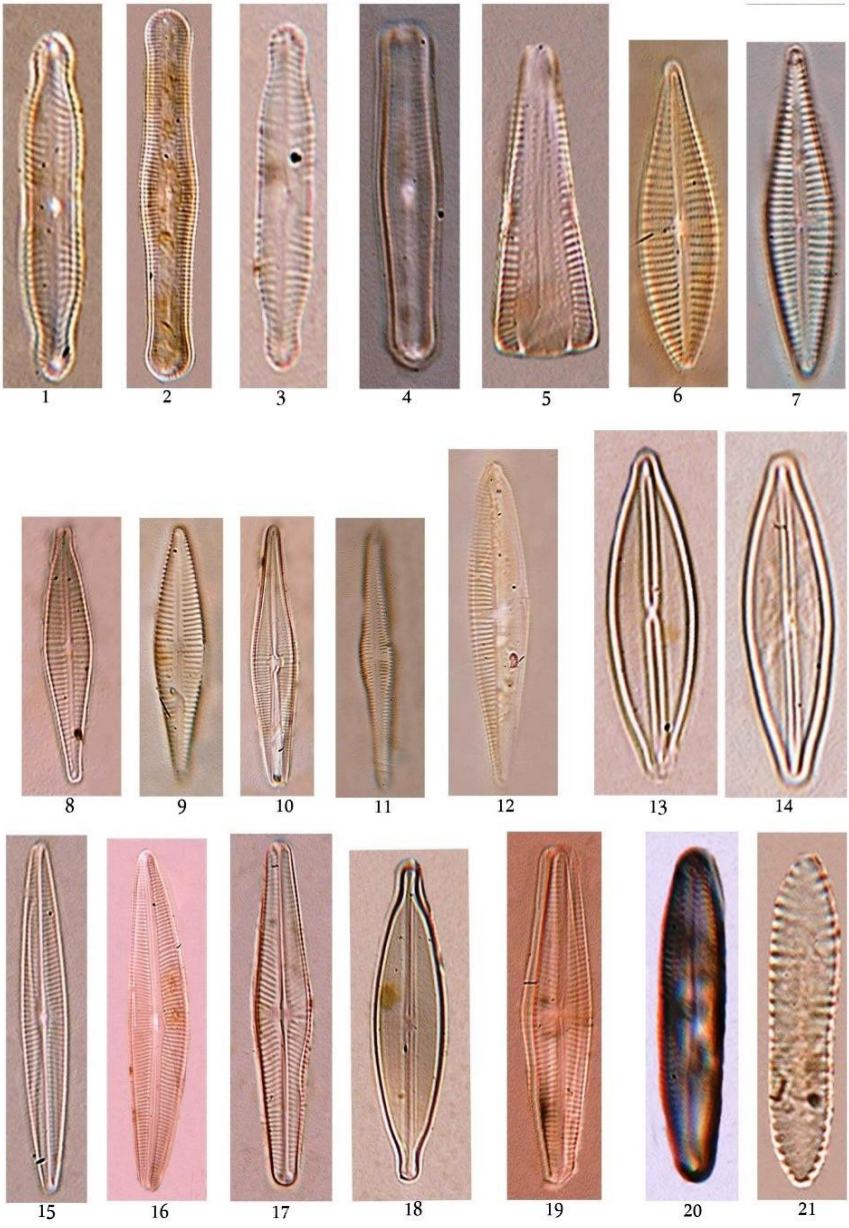
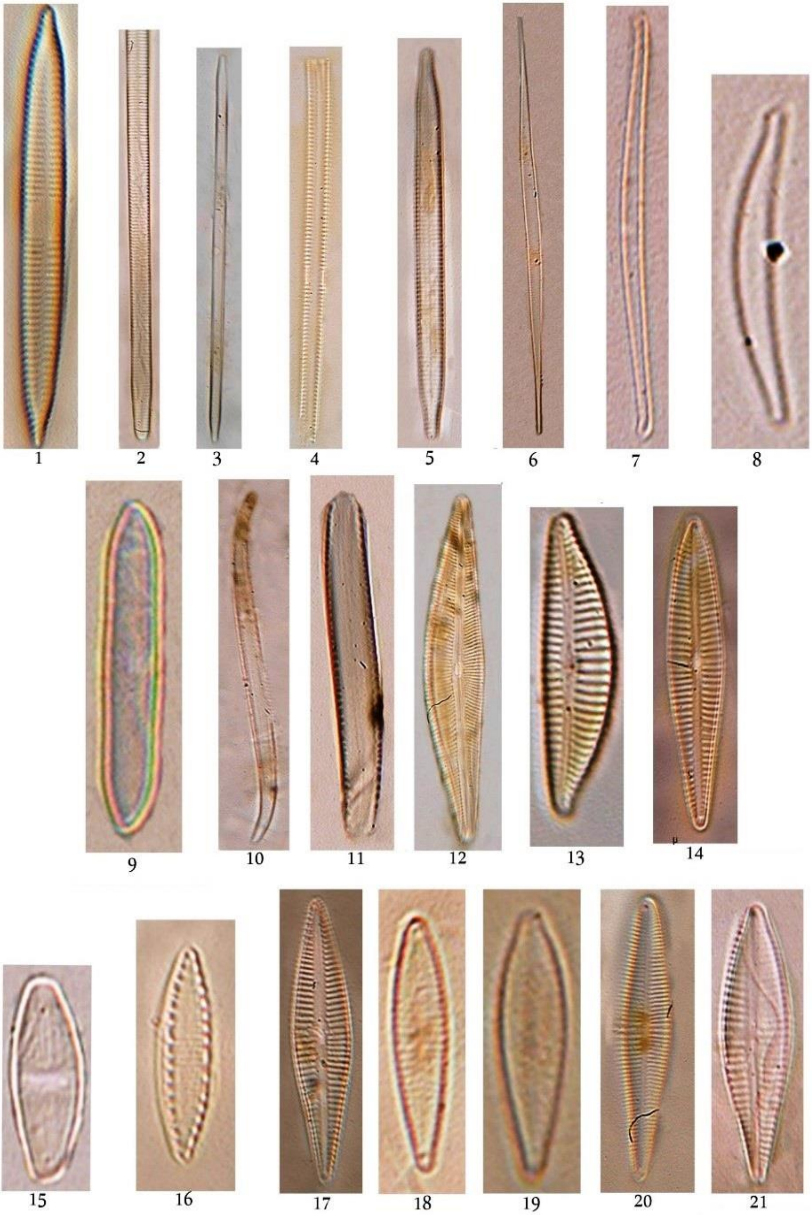
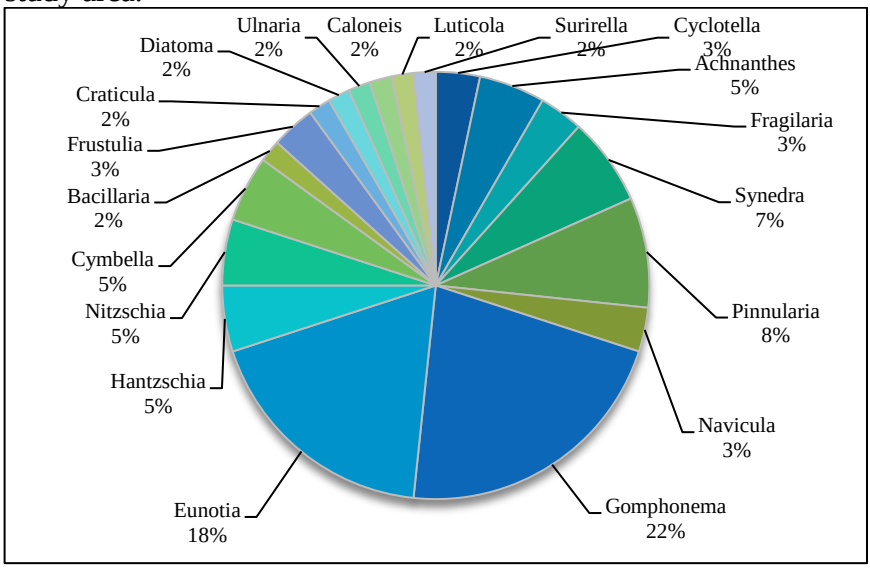


PLATE-3



Result

Present study has shown presence of sixty Bacillariophyceae taxa belonging to two orders Centrales and Pennales. Pennales were dominant over centrales in the diversity of genera and species. Of these genera Cyclotella (2) belongs to order centrales while remaining *Achnanthes* (3),*Fragilaria* (2), *Synedra* (4) *Pinnularia* (5), *Navicula* (2), *Gomphonema (*13), *Eunotia* (11),*Hantzschia* (3), *Nitzschia* (3), *Cymbella* (3), *Bacillaria* (1), *Frustulia* (2), *Craticula* (1), *Diatoma* (1), *Ulnaria* (1), *Caloneis* (1), *Luticola* (1) and *Surirella* (1) belongs to Pennales. Among these nineteen genera *Gomphonema and Eunotia* showed their dominance in the study region. These diatoms are being reported for the first time from the study area.



Graph: Biodiversity of Diatoms

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About the Book

The present book on "Innovative Trends in Biological Science" has been apprehend in order to discuss various aspects of biological science. This book is helpful in academic as well as research and widely read and reach to its target audience.

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