Navicula sp.

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**OBJECTIVES**

1. To collect Navicula specimen in the Kanglung area.
2. To study the characteristic of Navicula.
3. To describe the habitat of Navicula in Kanglung area.

**HABITAT**

It is freshwater alga which is commonly found in ponds and rivers usually free floating with other algae. It is found in the marshy and stagnant water which is contaminated and is collected from behind the DH5 hostel in Sherubtse College.

**RESULTS**

![Figure 1: Navicula](image1)

**OBSERVATION**

*Navicula* is a motile diatom which lives singly. It has the cell wall enclosing raphe which is located near the cell wall in the cytoplasm, two chloroplast located at the each sides of the raphe along with the pyrenoids and nucleus centrally located with two large vacuoles. It is boat shaped with yellow brownish color.

![Figure 2: Navicula 10x10x](image2)

**REFERENCE**


**DESCRIPTION**

Class: Bacillariophyceae
Order: Navicules
Family: Naviculaceae
Genus: *Navicula* (-Bory de Saint-Vincent, 1822)

*Navicula* falls under class Bacillariophyceae which is commonly known for its ornamentation. Cells of Navicula are solitary, motile and are in boat shaped [https://www.eoas.ubc.ca/research/phytoplankton/diatoms/pennate/navicula/navicula_spp.html]. At the central nodule, which is a solid internal thickening of the wall, the two over lying (external and internal) fissures of the raphe approaching from either pole bare connected by a loop like, somewhat sinuous canal [1]. Raphe is present in both the side of valve which bears three enlargement or nodules, one central nodules and two polar nodules. Raphe is responsible for the gliding movement in *Navicula*. It has two chloroplast at each side of raphe each with single rod-shaped pyrenoids (can be view only through girdle view) [http://craticula.ncl.ac.uk/EDIAdiatomKey/html/Navicula.html]. The cell wall along with plasma membrane encloses cell protoplast which is further differentiated into a single nucleus and cytoplasm. The cytoplasm encloses nucleus which is centrally located and two large vacuoles. They undergo asexual reproduction in favorable condition and sexual reproduction which is very rare.

![Figure 4: Navicula sp. showing chloroplast and central nucleus](image4)

**CONCLUSION**

The specimen collected from Sherubtse college campus near hostel DH5 has been identified as *Navicula*. It is found together with other freshwater algae which is boat shaped.

**FUTURE RESEARCH**

This project gives you information especially on *Navicula* specimen and can be used as reference to know its habitat. It would be useful for working on diatoms of Kanglung and Bhutan.

![Figure 5: Navicula sp. habitat](image5)