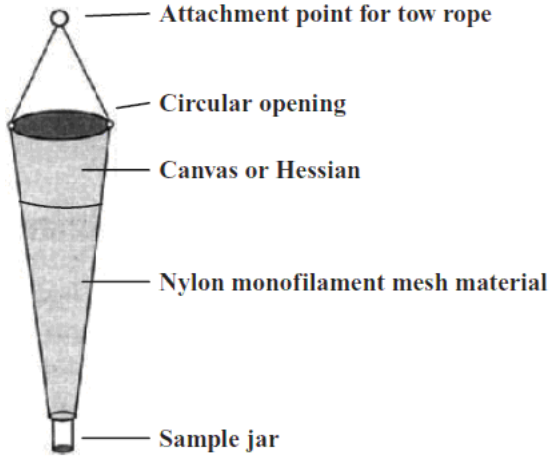
Collection, Storage and Preservation of algae

Sampling and enumeration can be separated in relation to these two main groups of algae – **planktonic** and **non - planktonic** (substrate-associated) organisms.

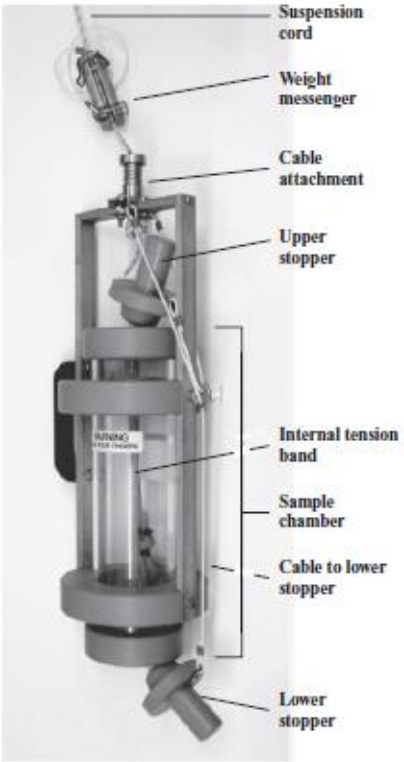
- **Method of phytoplankton collection:**

1- Planktonic or floating microalgae: can be collected with:

A) **Phytoplankton mesh net** (e.g., with 25–30 μm pores)



(B) Van Dorn Volume Sampler



2- Non-planktonic algae (Benthic algae):

Benthic algae include a diverse range of organisms, differing from phytoplankton in terms of their substrate association.

- **The techniques used for collecting non-planktonic algae depend upon** the depth of the water, the nature of the substrate and the type of algal community.
- **Benthic algae:** defined as those algae at the bottom of lakes, deep rivers and estuaries that are relatively faraway and have to be sampled by sediment traps and bulk samplers.

- **According to the substrate type in shallow water Benthic algae can be classified as:**

	Substrate Type	Collecting Method
Epilithic	Stones and rocks	Remove stone and scrape surface with knife
Epidendric	Woody material	scrape surface with knife
Epipelic	Sediment surface	scoop up the top layer of sediment into a suitable container.
Epiphytic	Plant surfaces	Scrape algae then place in a tube with water and preservative .
Epipsammic	Sand	Collect a small quantity of sand from the surface region. Place in a tube with a small quantity of water and shake, Allow to settle and pipette off some of the settled material and place on a slide for observation.
Epizooic	Hard-shelled animals	Carefully collect the host animal. Use the same technique as for the epilithon.

- **Storage and preservation of algal sample**

Storage: Algae can be stored initially in a **glass jar**, **plastic bottle**, or in a **vial** with some water from the collecting site. The container should be half filled with liquid .

Labeling: Any sample should be **labeled** with standard information such as the locality, date of collection,

the **water** is saline, brackish or fresh, muddy or polluted,

the **collection site** is terrestrial, a river, a stream, or a lake;

the alga is free floating or attached.

Preservation of algae:

Lugol solution (used for short-term (e.g., a few months) prepared by dissolving 20 gram of potassium iodide (KI) and 10 gram of iodine crystals (I_2) in 200 ml of distilled water, used for preservation of non-diatoms sample in vials , to preserve samples add 0.7 ml of solution to 100 ml of algal sample.

Formalin solution (Algae can be kept in diluted formalin for a number of years) (4-10%) was used for algal preservation by adding 3-4 drops to 100 ml of sample.

- ✓ To avoid the loss of taxonomic characters the **flagellated forms** of phytoplankton and epipelic algae were identified before fixation.

- ➢ **Basic parts of the microscope**