

Special Environments

Lect. #2

4th

Chemistry-Zoology
Group

EXTRACTION METHODS

- ▶ There are Many methods for separating animals from the soil where they live.
- ▶ Generally, all these methods can be put under two Main categories:

1 Mechanical Methods

2 Behavioural Methods

1

Mechanical Methods

- ▶ **Passive method.**
- ▶ **Didn't depend on animal behaviour.**
- ▶ **Extract Active & Inactive animals.**
- ▶ **Doesn't discriminate between dead animals at time of sampling or before.**

2

Behavioural Methods

- Active method.
- Depend on animal behaviour.
- Extract Active animals ONLY.
- Doesn't collect some stages as eggs, resting stages & dead animals.

1

Mechanical Methods

1- Sieving methods.

- a. Dry sieving
- b. Wet sieving

2- Floating methods.

2

Behavioural Methods

- Animal is stimulated to scape away.

1- Berlese funnel method.

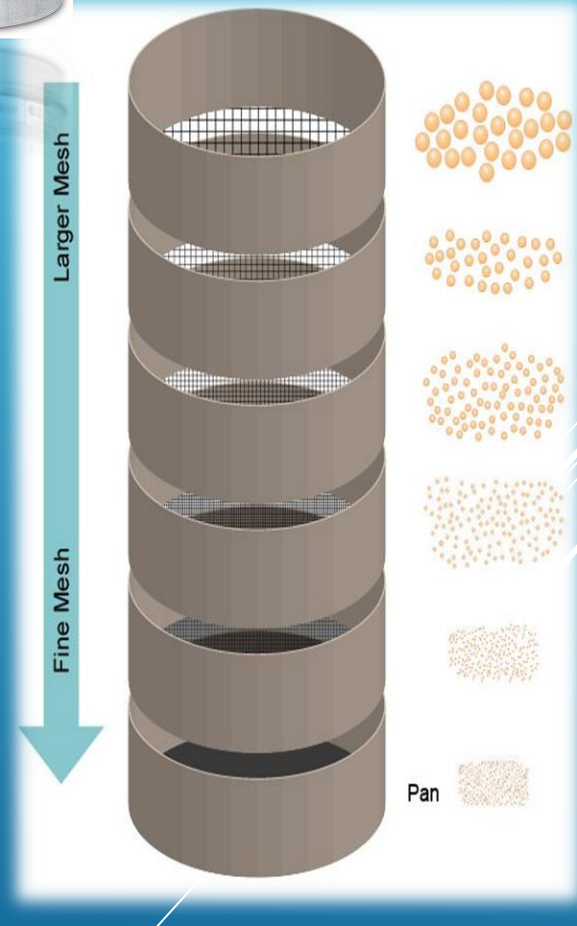
2- Tullgren funnel method.

Mechanical Methods

1- Sieving methods.

A- Dry sieving

- ▶ When animals size differ from Soil particles.
- ▶ Depend on **mesh size** of sieve, so **separate different animal categories**.
- ▶ Also, **separate soil** particles.
- ▶ Usually we use a shaker.
- ▶ As earth worms, centipedes



Mechanical Methods

1- Sieving methods.

B- Wet sieving

- ▶ More **effective** than dry one.
- ▶ Separate **medium** and **small** sized-animals **other than arthropods**.
- ▶ Effective for animals associated with **leaf litters**.
- ▶ As the previous, but sieves filled with water.
- ▶ Content of each sieve washed and collected on fine cloth page.



Mechanical Methods

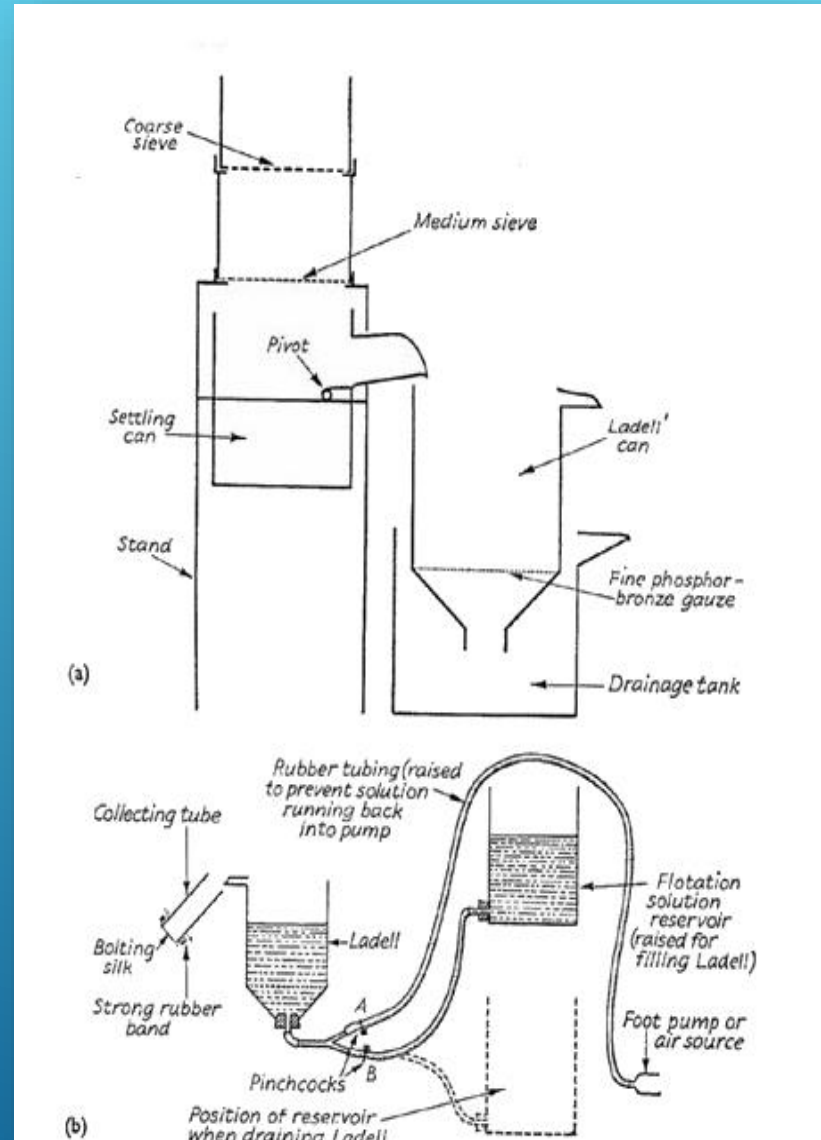
2- Floating methods.

B- Wet sieving

- ▶ Used for micro-Arthropods that not extracted by sieving methods **because they are usually attached to debris.**

1- Separate microarthropods + plants from soil particles.

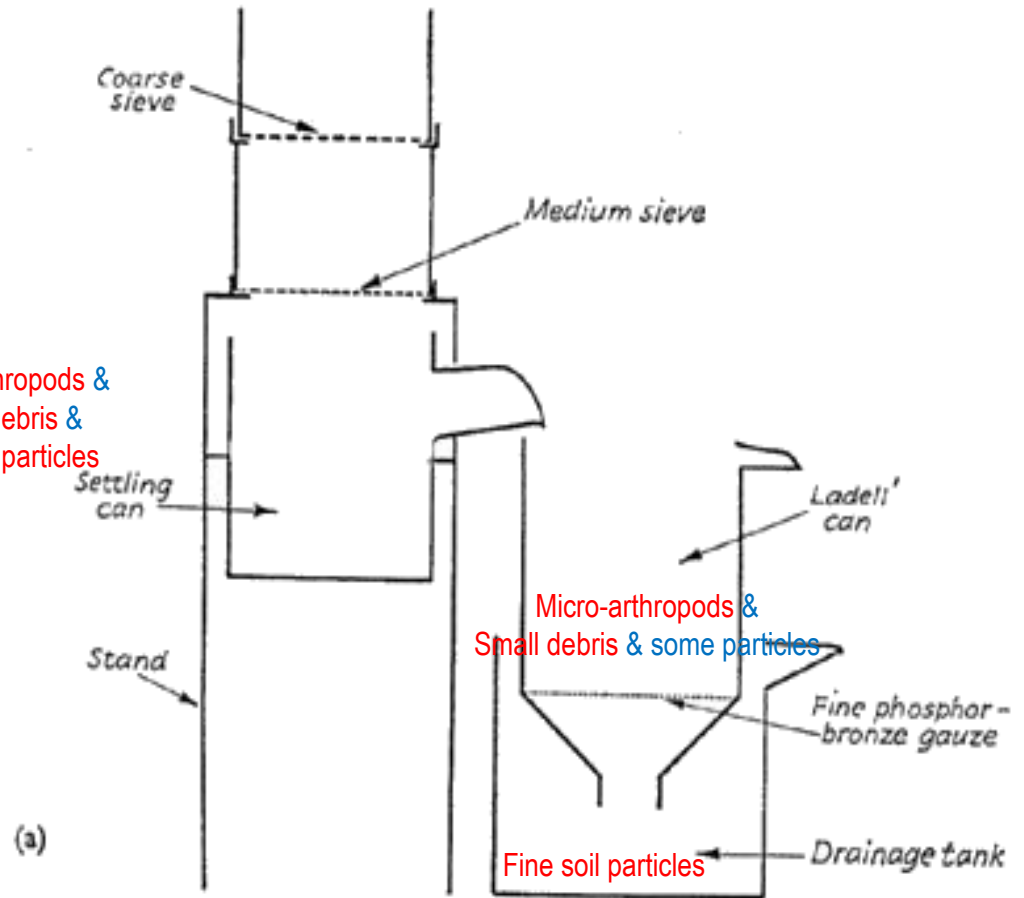
2- Separate microarthropods from plants.



Mechanical Methods

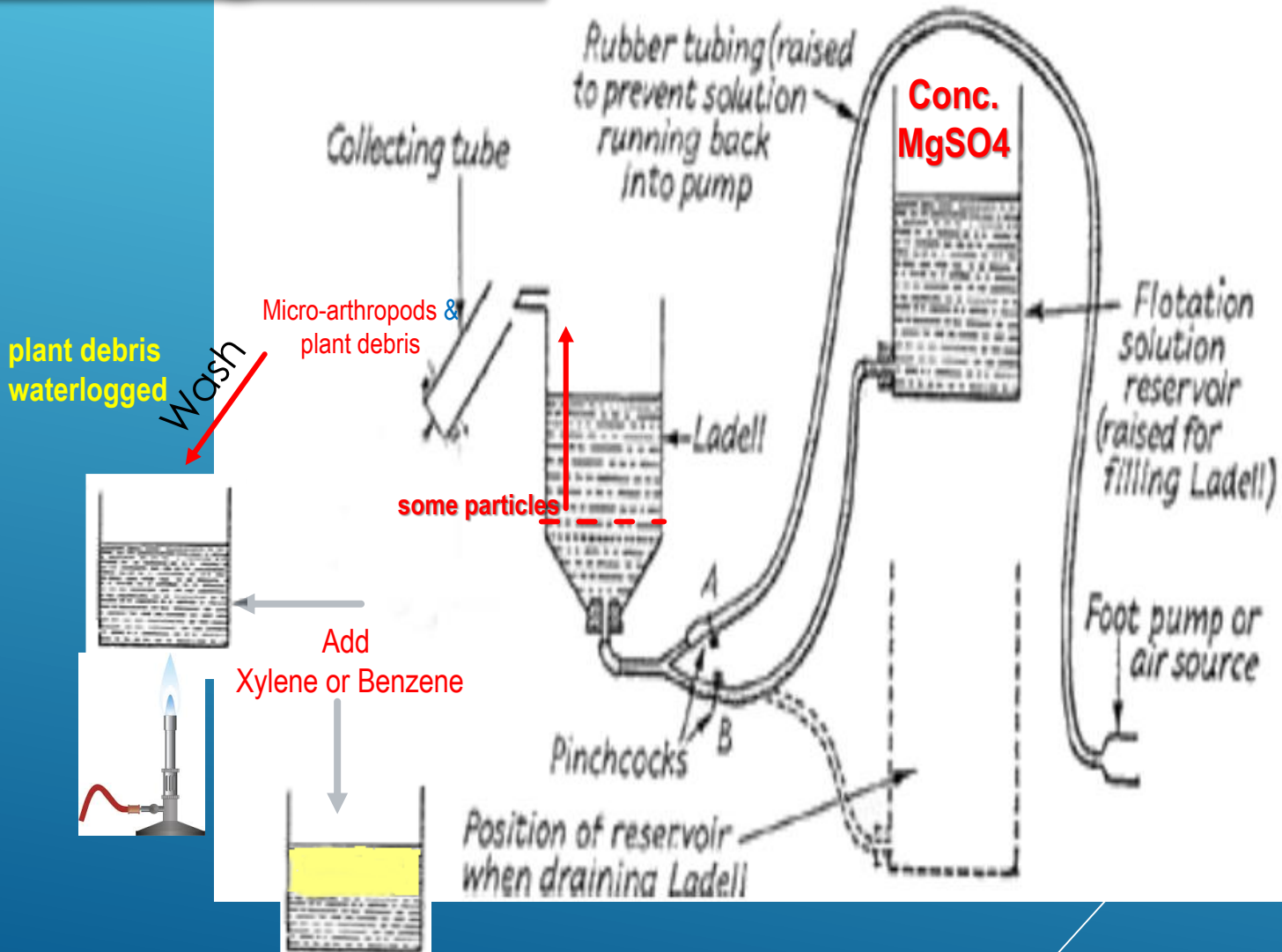
2- Floating methods.

Micro-arthropods &
Small debris &
Fine soil particles



Mechanical Methods

2- Floating methods.



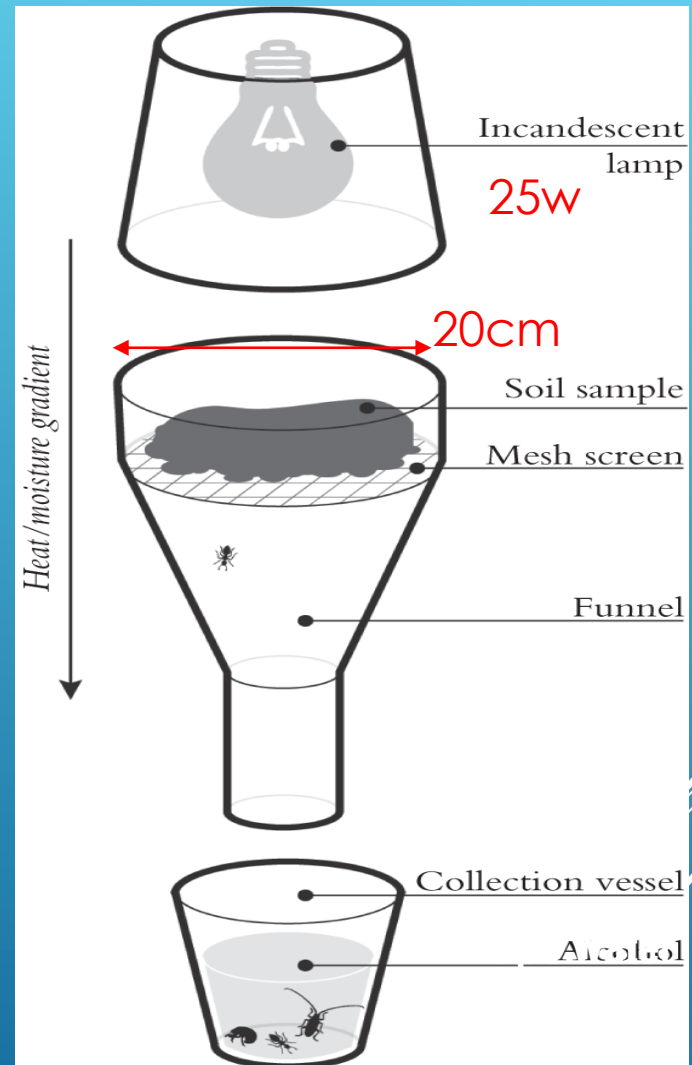
Behavioural Methods

1- Berlese-Tullgren Funnel Dry Behv. method

- ▶ Effective for separating **Collembola** and **Acari**, but not **Nematodes**
- ▶ Was improved by many authors.



- Some cover the funnel to avoid water condensation due to heat.



Behavioural Methods

2- Baermann Funnel Wet Behv. method

- ▶ Effective for separating Nematodes & Enchytraeids.
- ▶ Funnel filled with water until touch the soil sample.
- ▶ Sometimes the soil sample put in muslin bag and immersed in water.
- ▶ Worms leave the soil under heat effect and collected in neck of funnel.

