



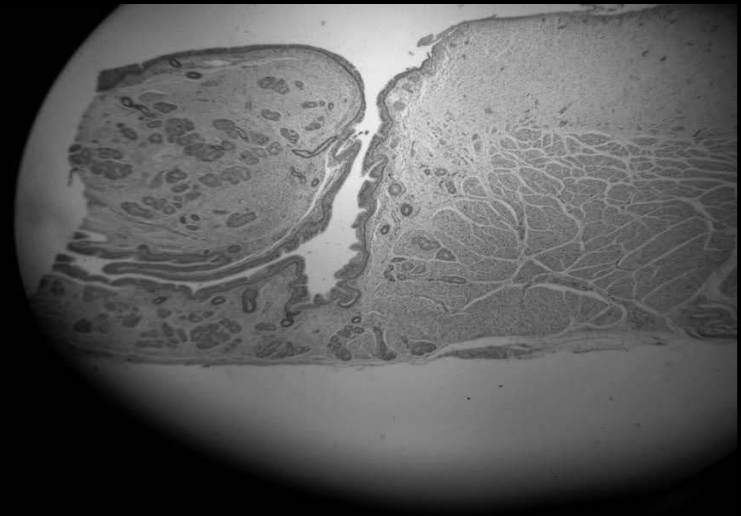
# RESPIRATORY SYSTEM

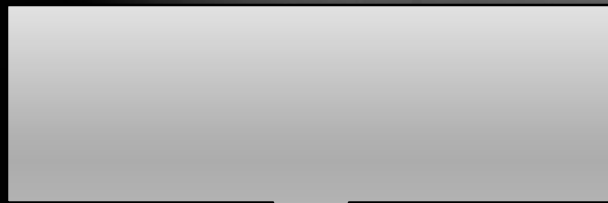
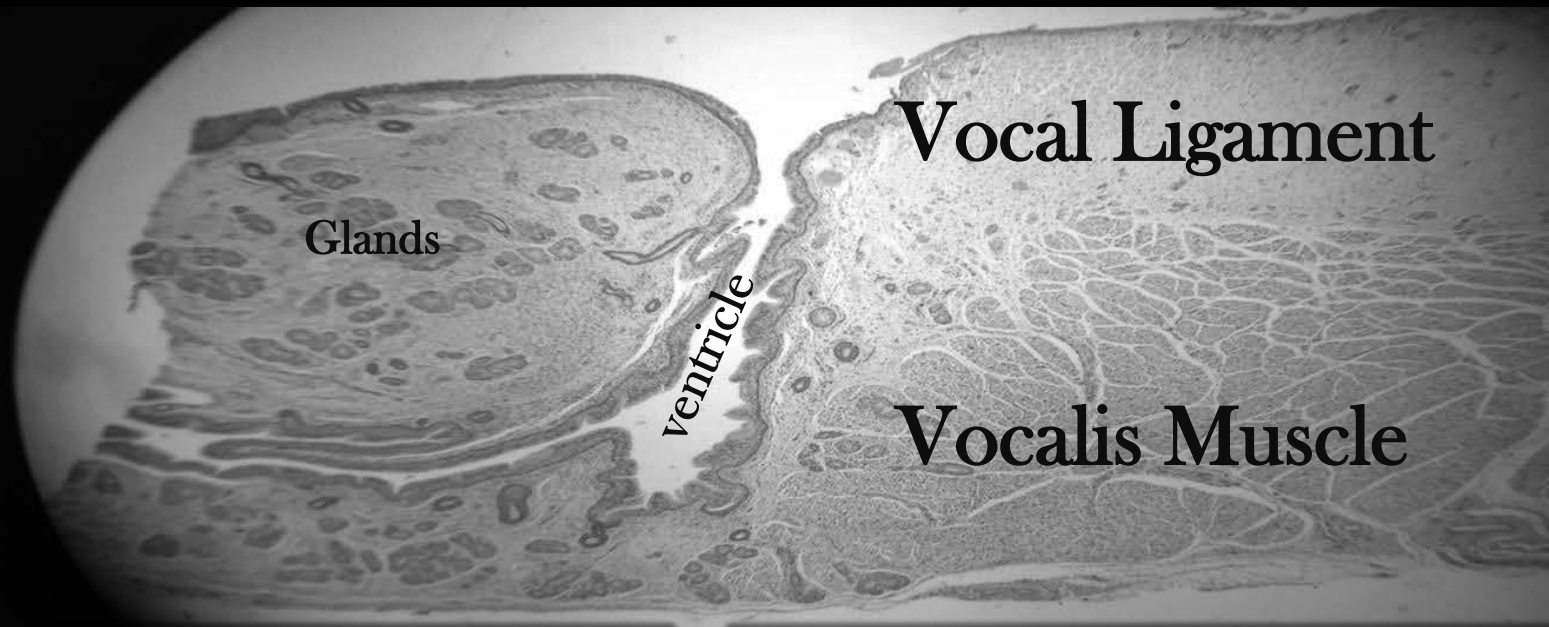
HISTOLOGY LAB (1&2)/SLIDES



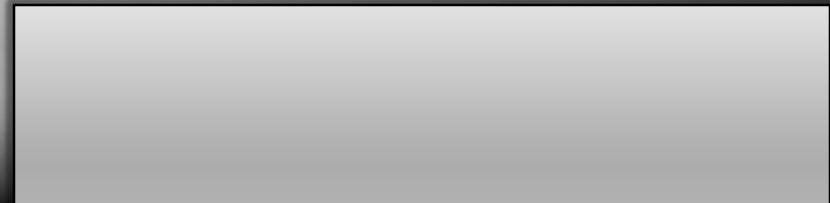
## ■ Larynx:

- The muscle in this section is called Vocalis Muscle ((which is a striated (skeletal) muscle )) and is found in the true vocal cords.
- Notice the infraglottic glands (in the false vocal cords) and the respiratory epithelium.
- Look for the vocal cords which are devoid of *large blood vessels*, they contain small capillaries ONLY.





**False Vocal Cord**



**True Vocal Cord**

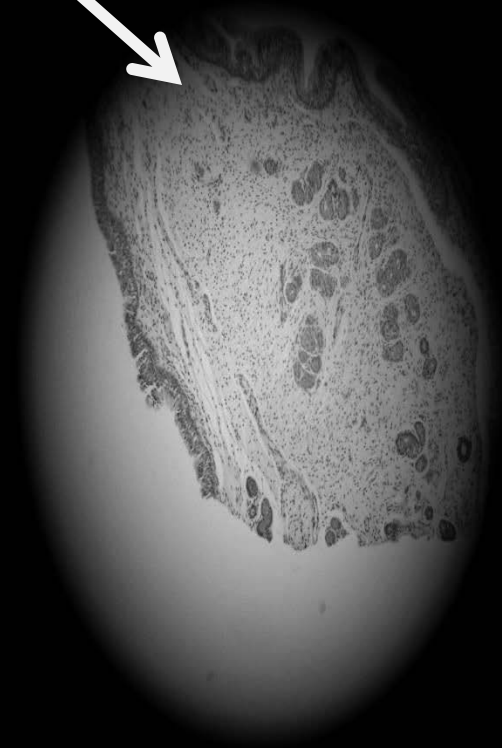
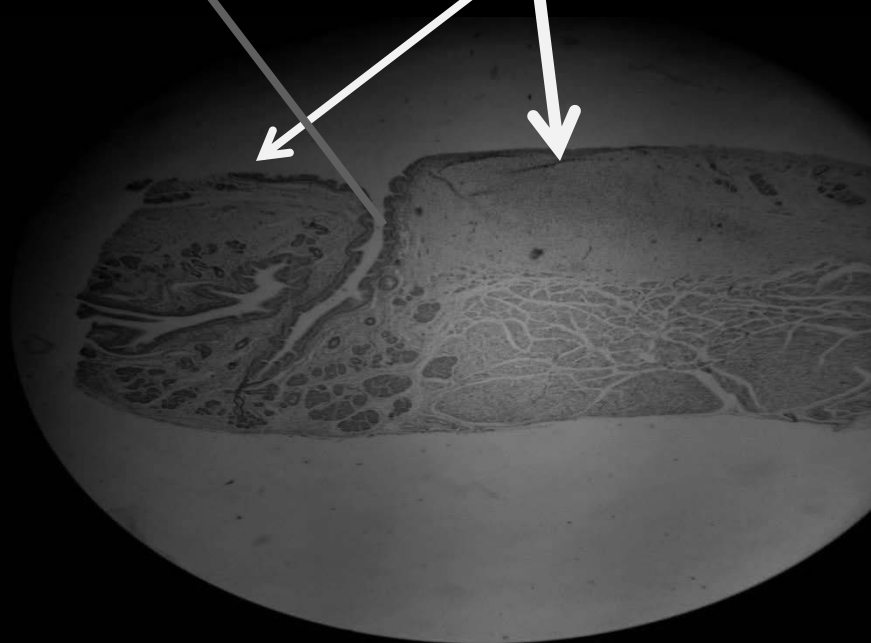
- Larynx:

- Notice the **ventricle** that separates false vocal cords from the true vocal cords.



- Larynx

-Vocal Cords: True & False  
ventricle



Capillary blood vessel



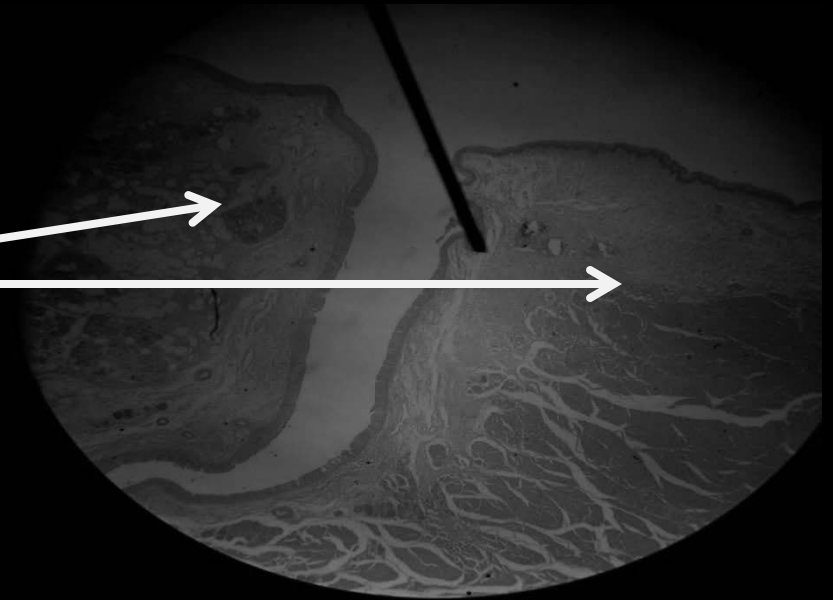
Glands



- Larynx:

- True vocal cords.

- False vocal cords.



■ Trachea :

- Cross Section.
  - Which type of muscles is present in this section ?
- Spindle-shaped smooth muscle cells.

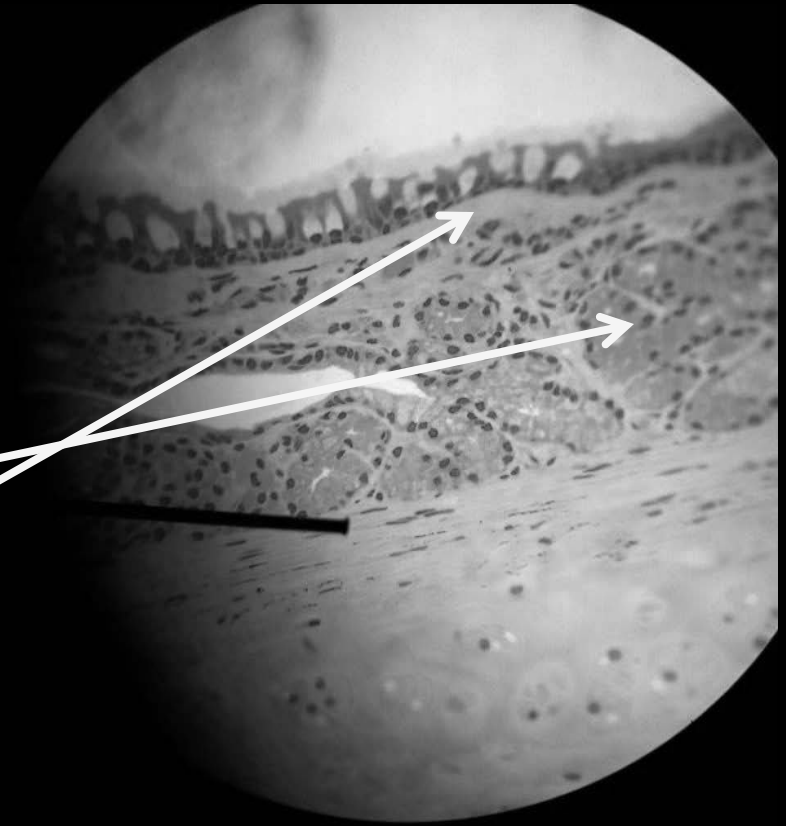


Esophagus



■ Trachea :

- Monkey, plastic section.
- Look for :
- Tracheal Glands.
- Goblet Cells.
- Basement Membrane.
- Epithelium.



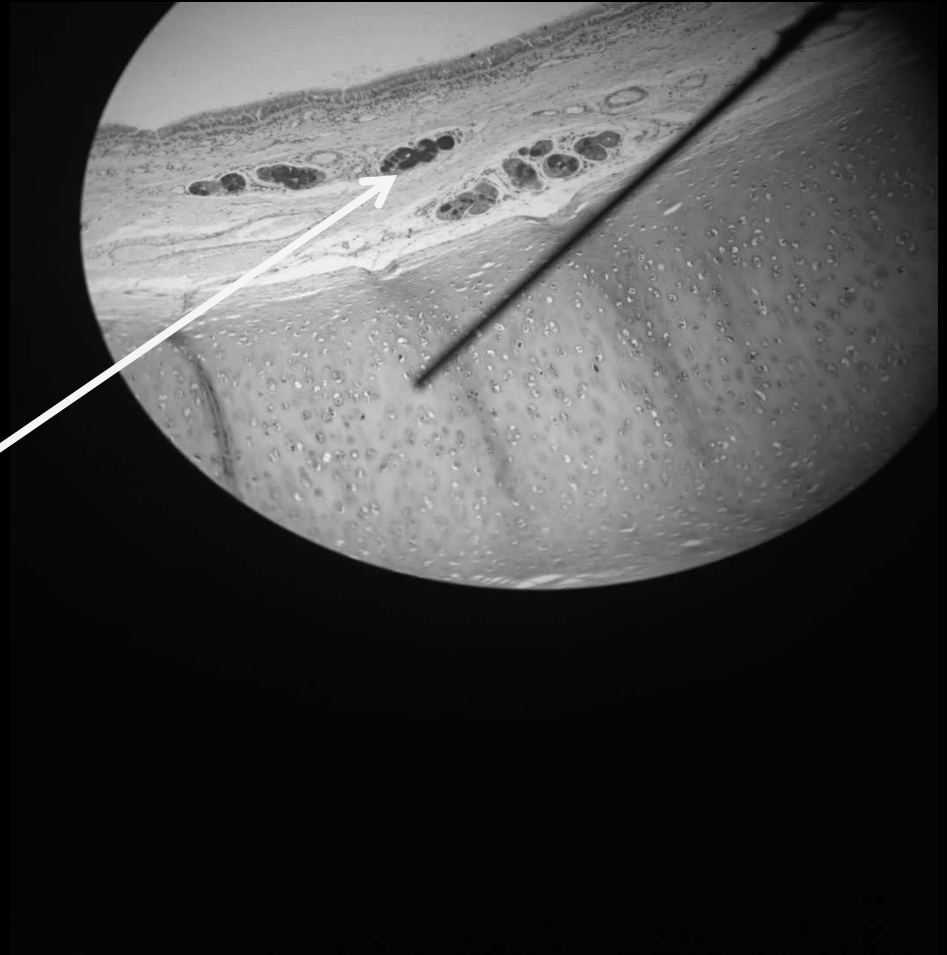
## ▪ Trachea

-PAS reaction

-Look for:

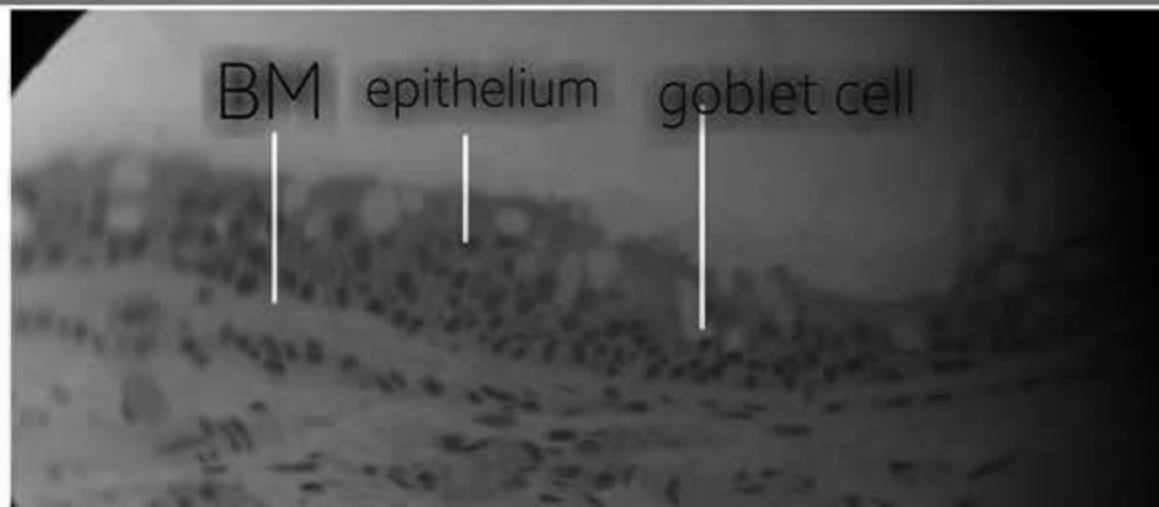
Basement Membrane  
(acellular,  
continuous, thick  
homogenous line  
beneath the  
epithelium).

Mucous + goblet  
cells(violet staining)

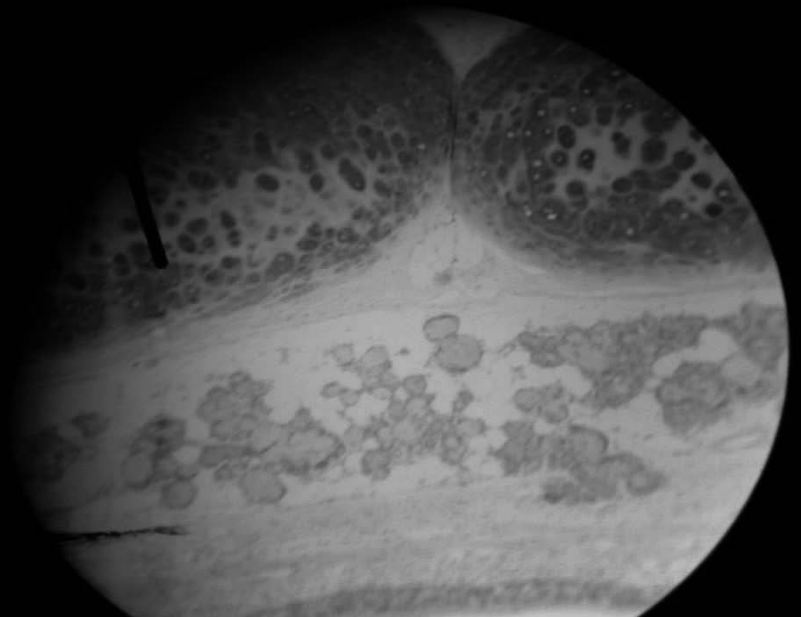
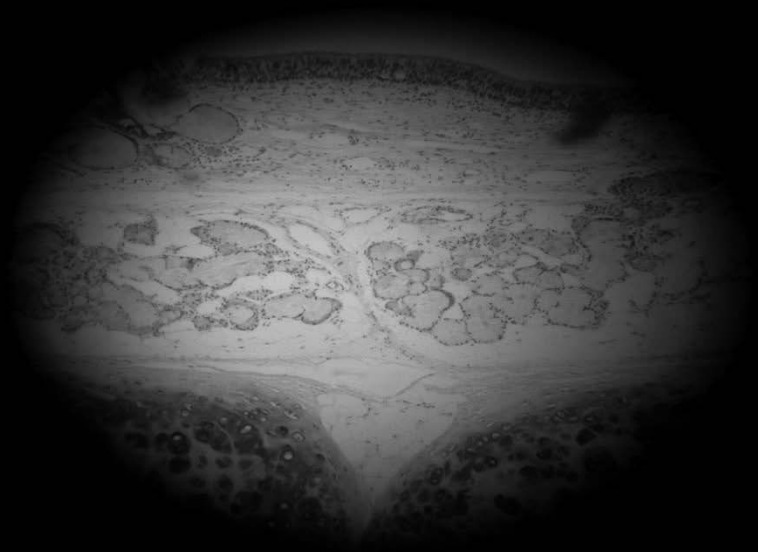


# Trachea

## C.S.



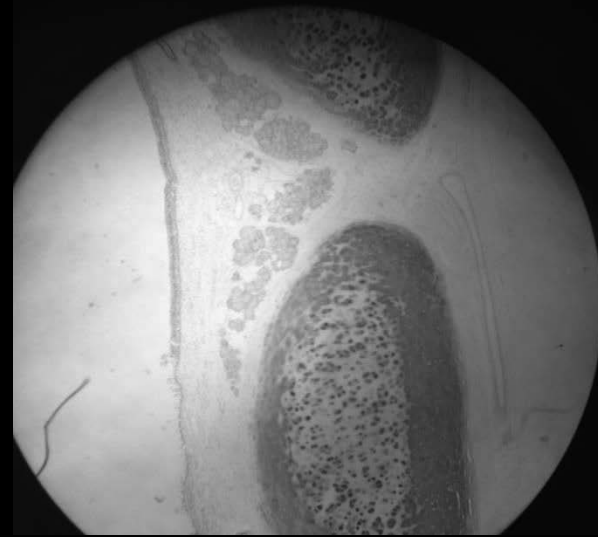
- Extrapulmonary ( Primary) Bronchus.



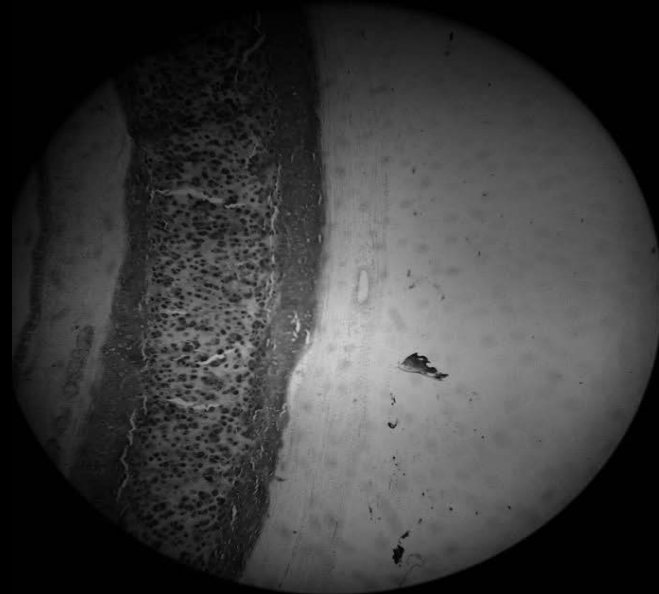
■ Trachea and  
Extrapulmonary  
Bronchus.

The main difference  
between them is that:

- Trachea: contains C-shaped cartilage (continuous).
- Primary Bronchus: contains Pieces of cartilage around the circumference (Discontinuous).



Extrapulmonary  
Bronchus



Trachea

- Lung Tissue

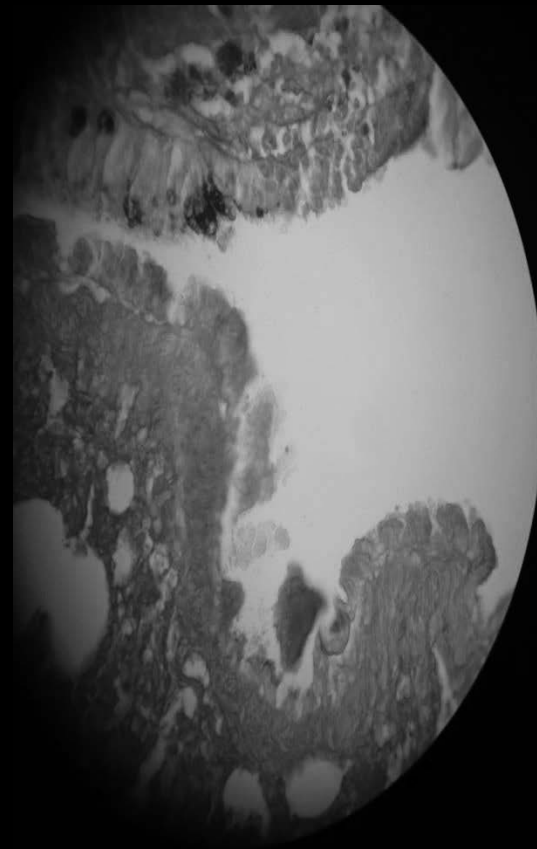
- Special Stain  
(PAS)

- Intrapulmonary  
Bronchi.

- Look for:

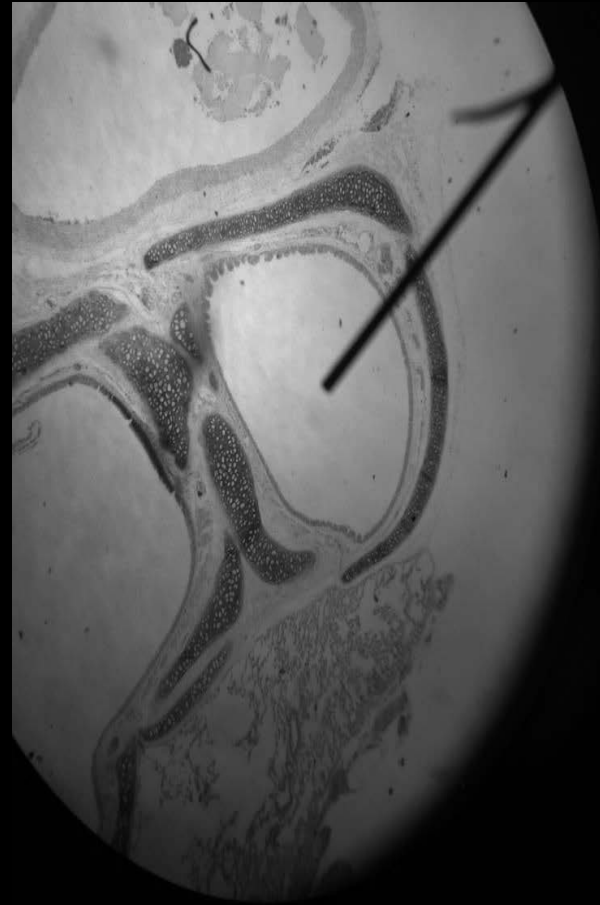
- Cartilage.

- Goblet Cells.

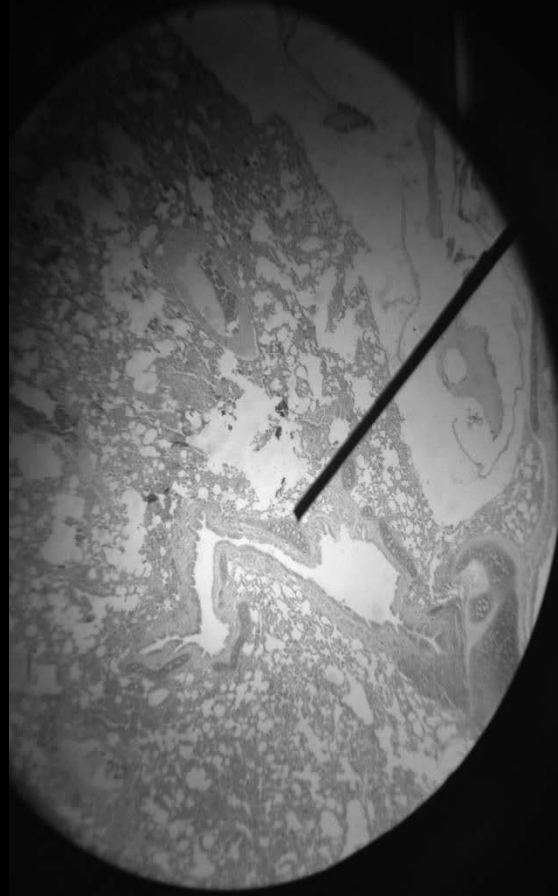


## ▪ Intrapulmonary Bronchus.

- Secondary Bronchus.
- Pieces of cartilage  
compassing the whole  
circumference.
- Few goblet cells in the lining  
epithelium.
- Few seromucous glands in  
the submucosa.
- Epithelium: pseudostratified  
ciliated columnar.
- Increased number of  
smooth muscle patches  
around the circumference.
- Increased number of  
lymphatic nodules (plates).



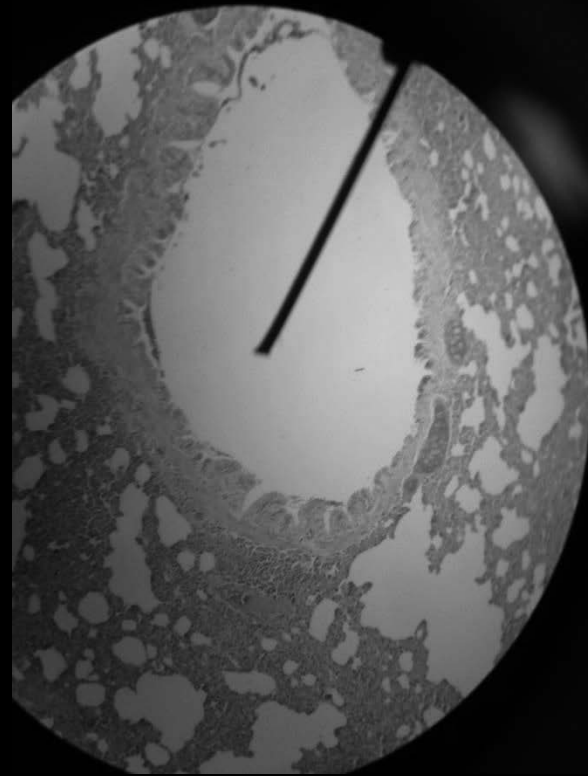
- Intrapulmonary  
Bronchus.  
(secondary)



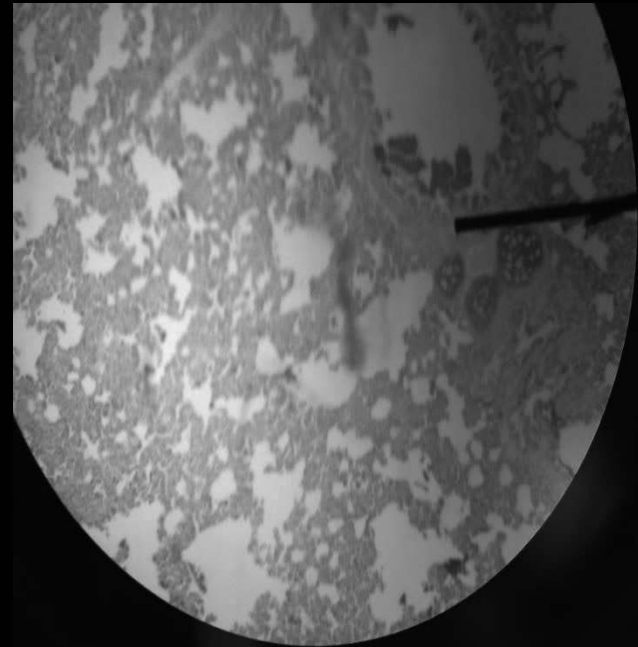
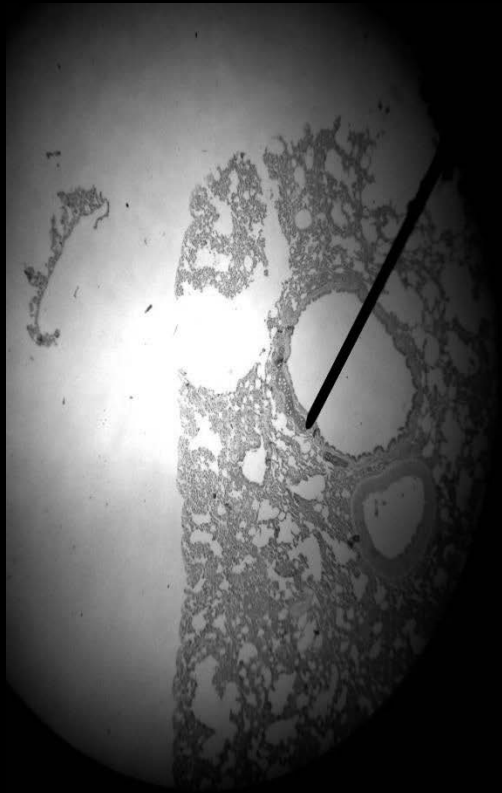


▪ Intrapulmonary  
Bronchus.

- Tertiary Bronchus.
- Continuous smooth muscle layer (causing tortuosity in the lining epithelium)
- Cartilage : 1-2 pieces, not circumferentially distributed.
- Paucity of goblet cells.
- Paucity of seromucous glands .
- Epithelium:  
Pseudostratified ciliated columnar.

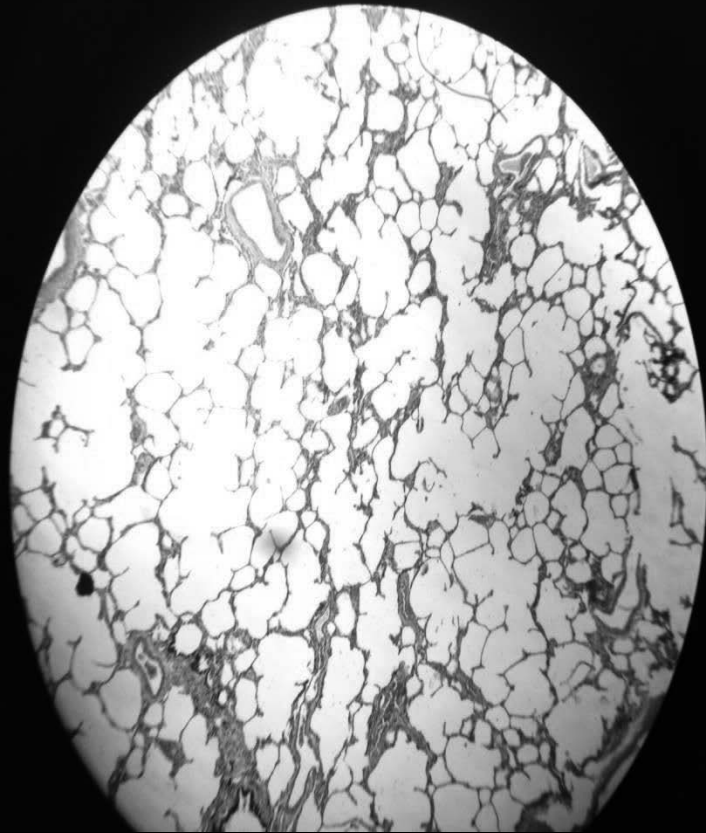


- Intrapulmonary ( Tertiary) Bronchus.



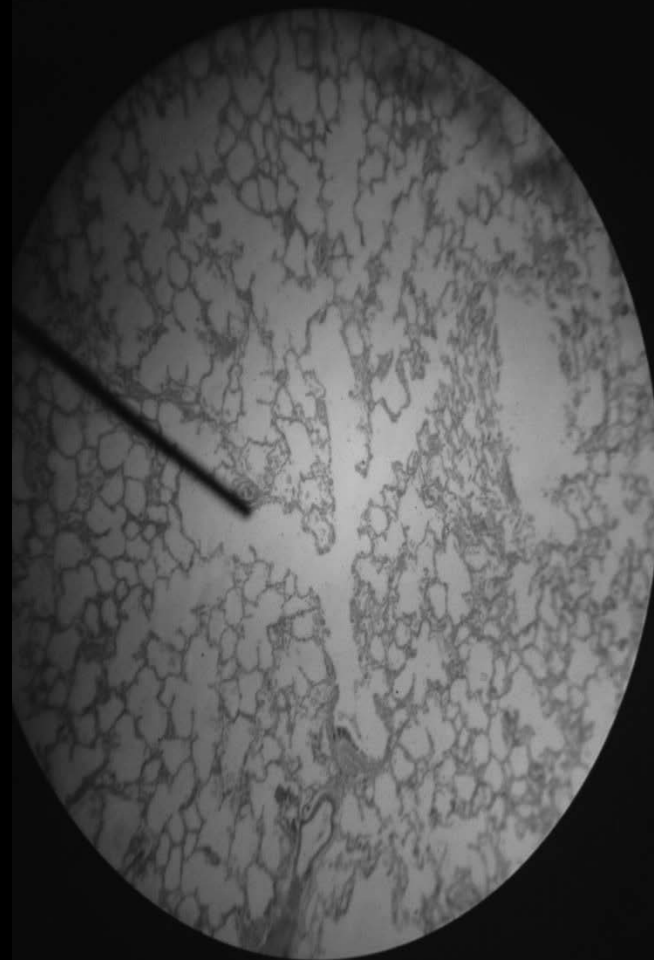
■ Lung Tissue:

- Bronchioles  
(terminal &  
respiratory)
- Alveolar duct.
- Alveolar sac.
- Alveoli.



■ Lung Tissue :

- Atrium.
- Alveolar duct.
- Alveolar sac.
- Alveoli.



▪ Lung Tissue:

-Alveolar duct.

-Alveolar sac.

-Alveoli.

-Cells:

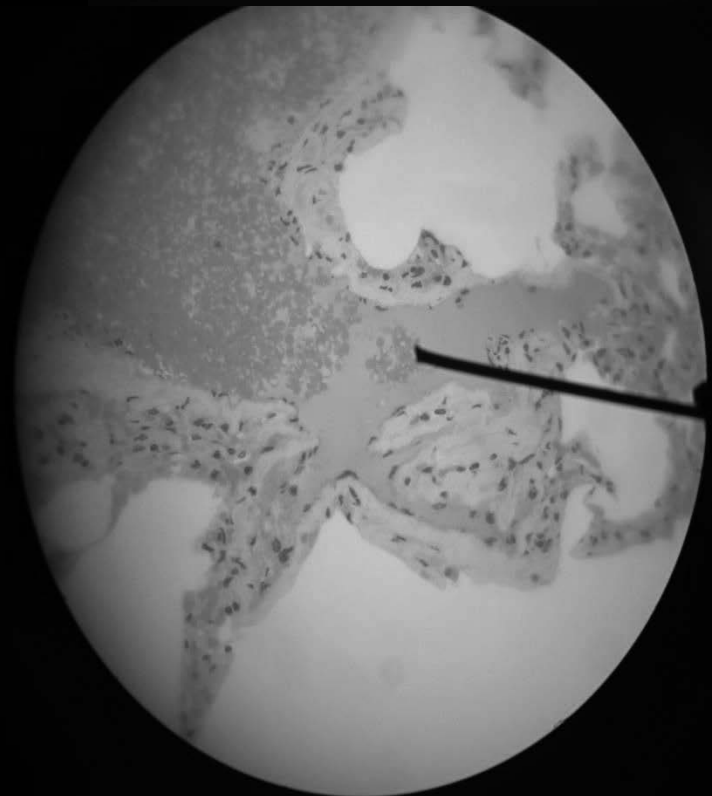
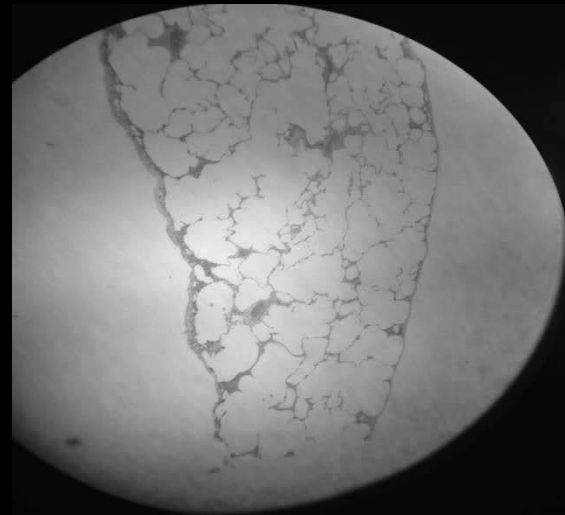
Type 1.

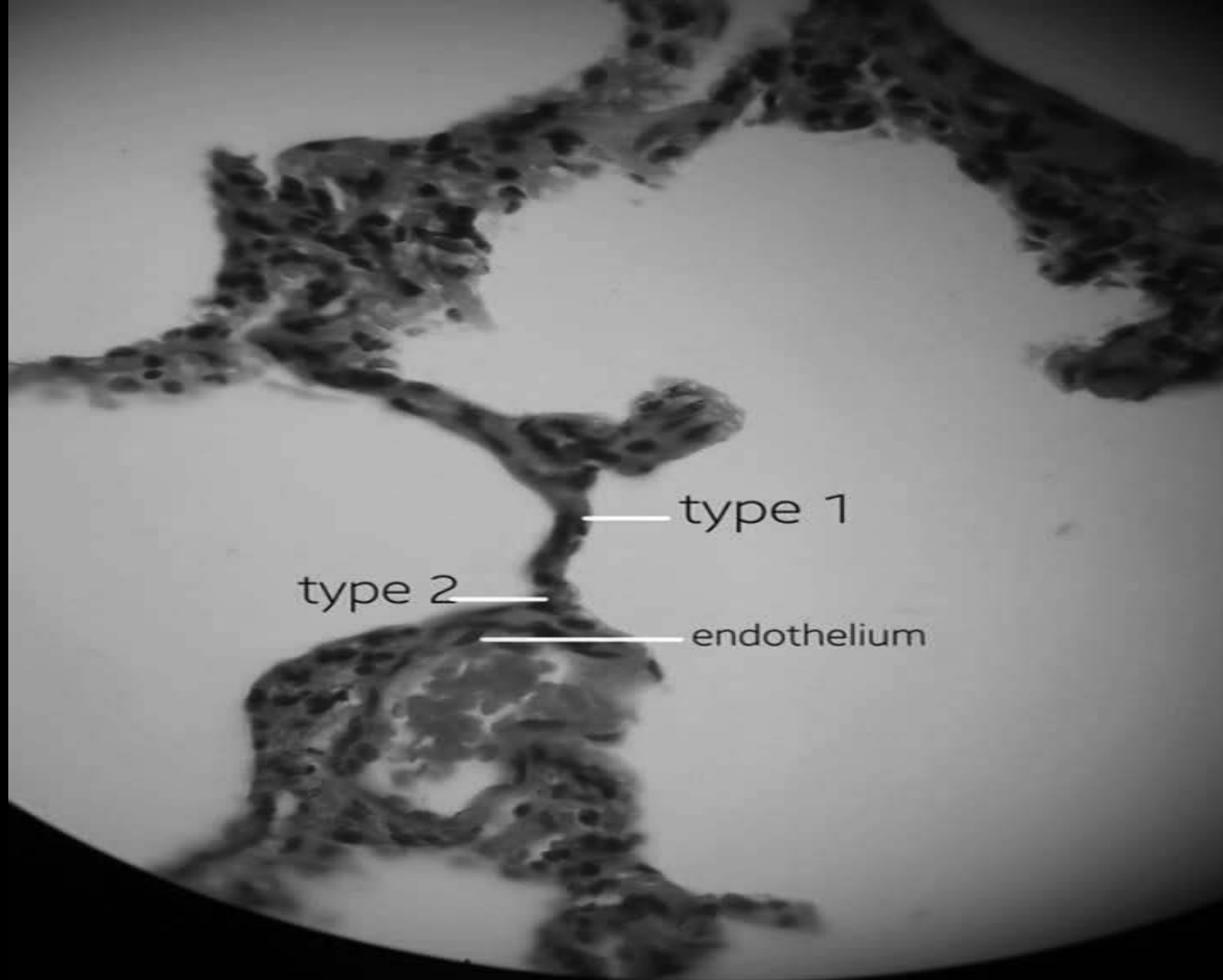
Type 2.

Endothelial .

-Pleura.

-Mesothelium.





## ■ Lung Tissue:

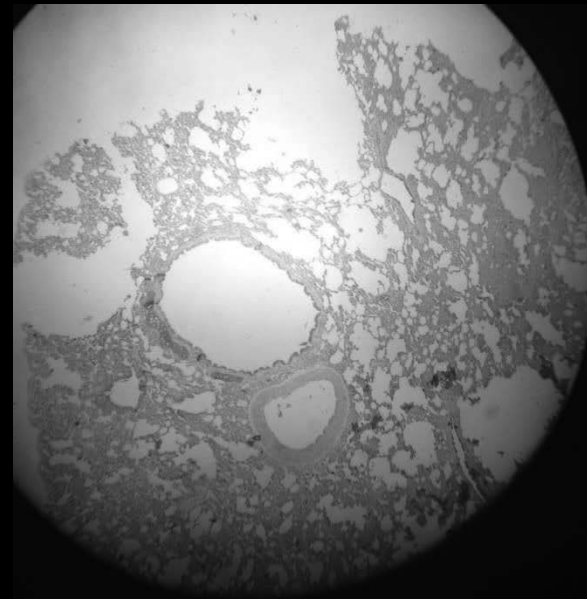
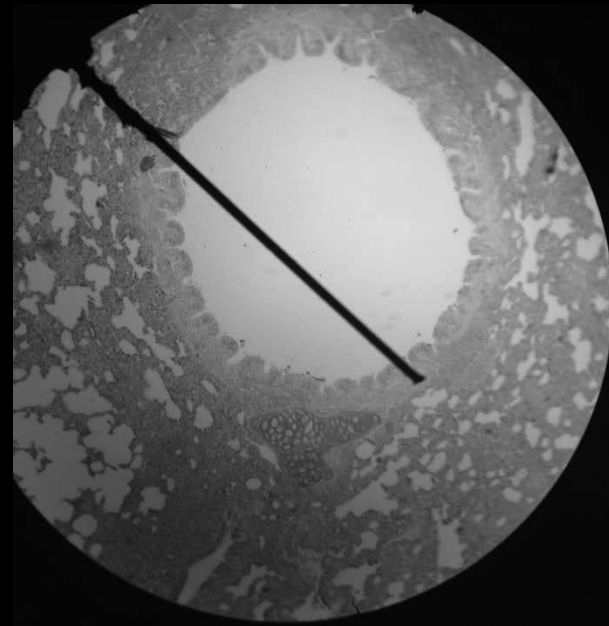
- Terminal Bronchiole.
- Alveolar duct.
- Alveolar sac.
- Alveoli.



- Lung Tissue:

- Bronchi.

- Terminal  
bronchiole.

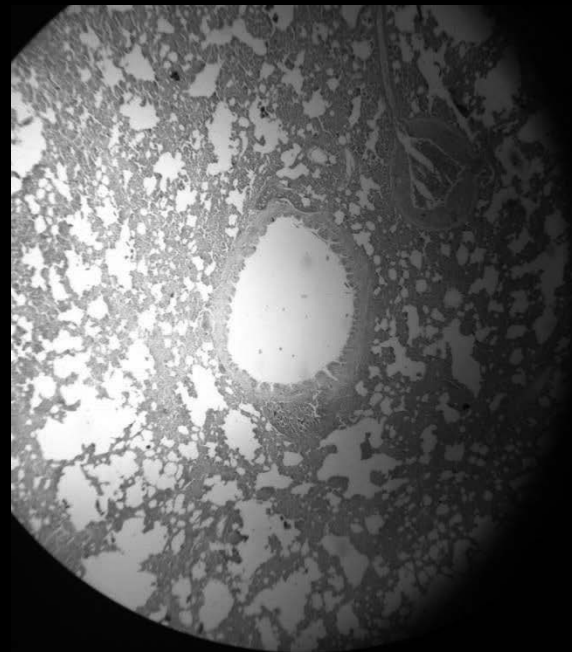
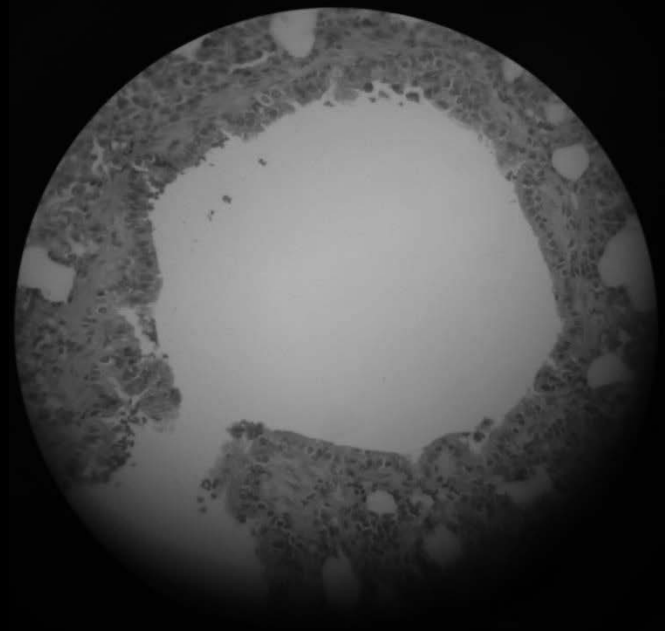




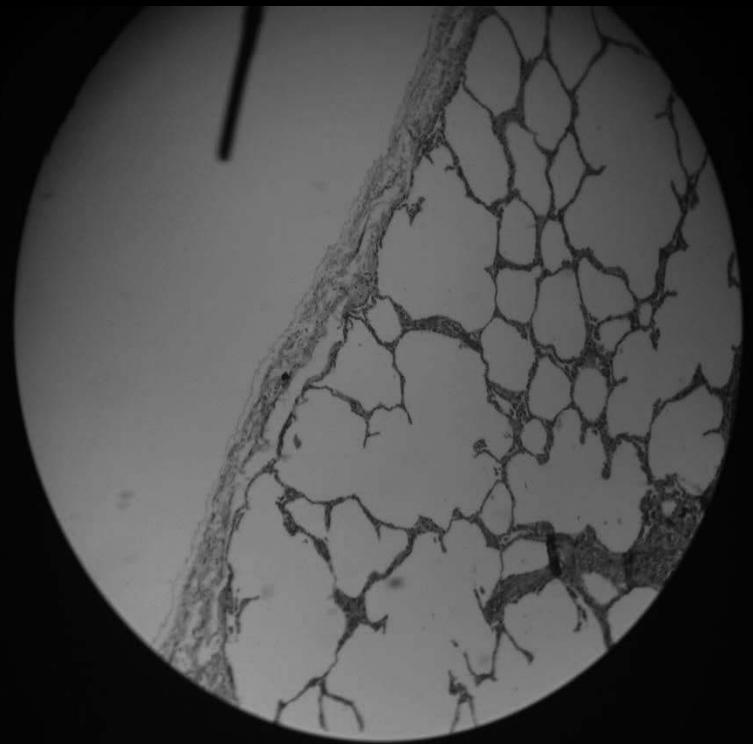
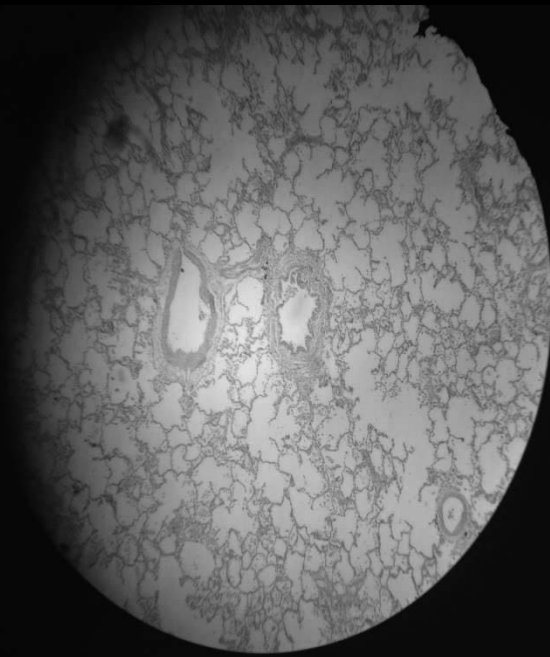
- Lung Tissue:

- Bronchi.

- Terminal  
bronchiole

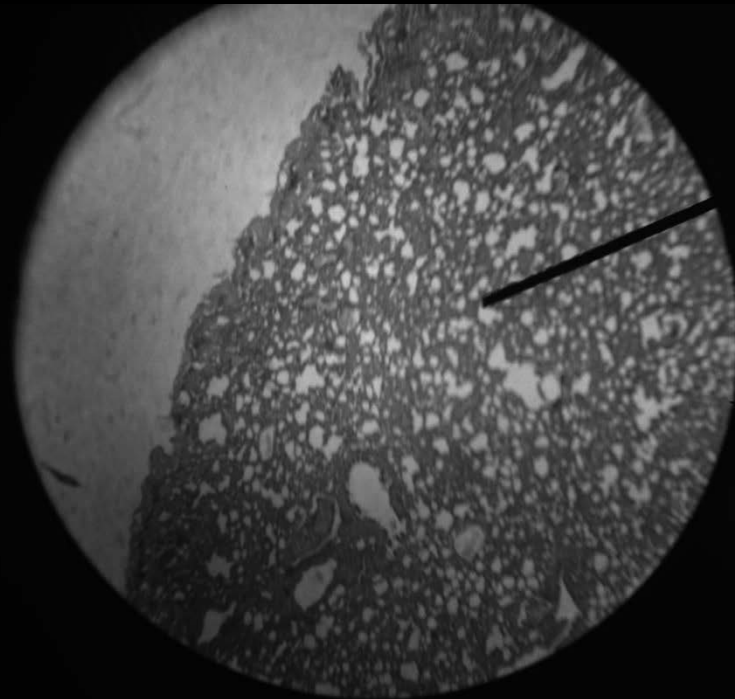


# ■ Lung Tissue



■ Lung Tissue:

- Thick section.
- Bronchi.
- Bronchiole.
- Pleura.

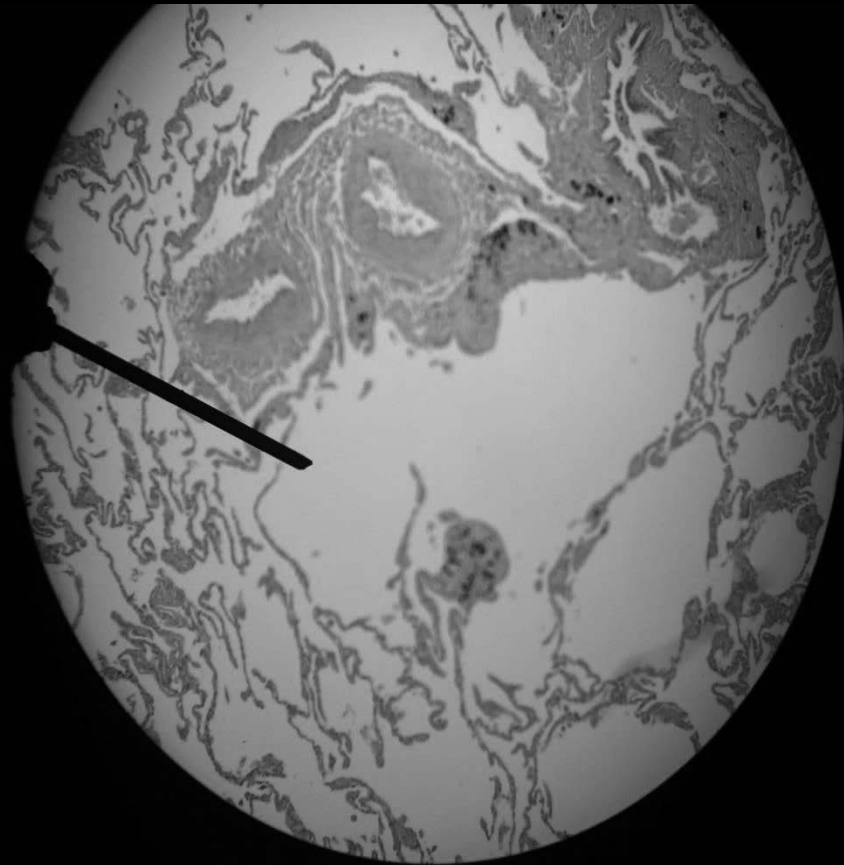


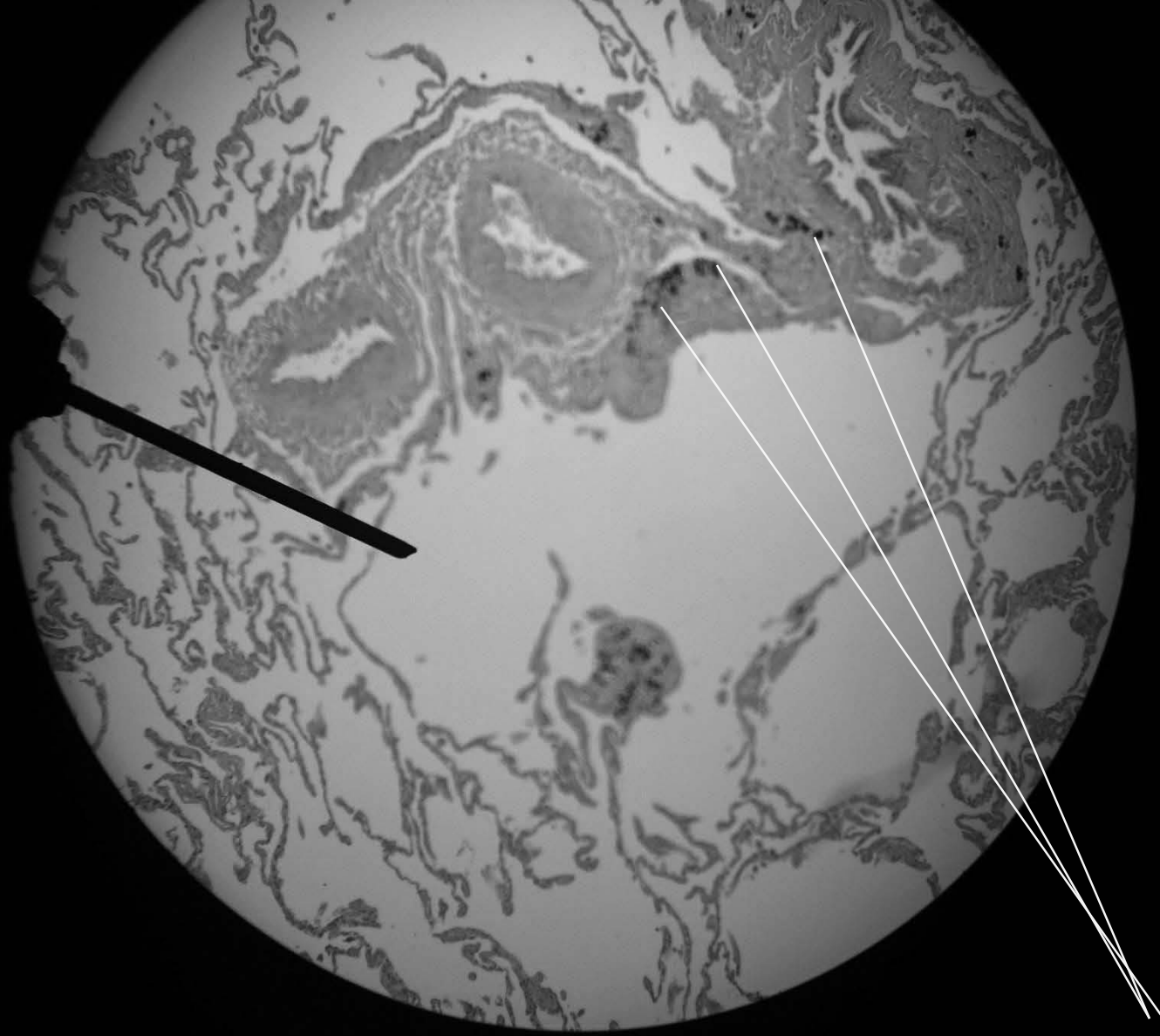
■ Lung Tissue:

-Bronchiole.

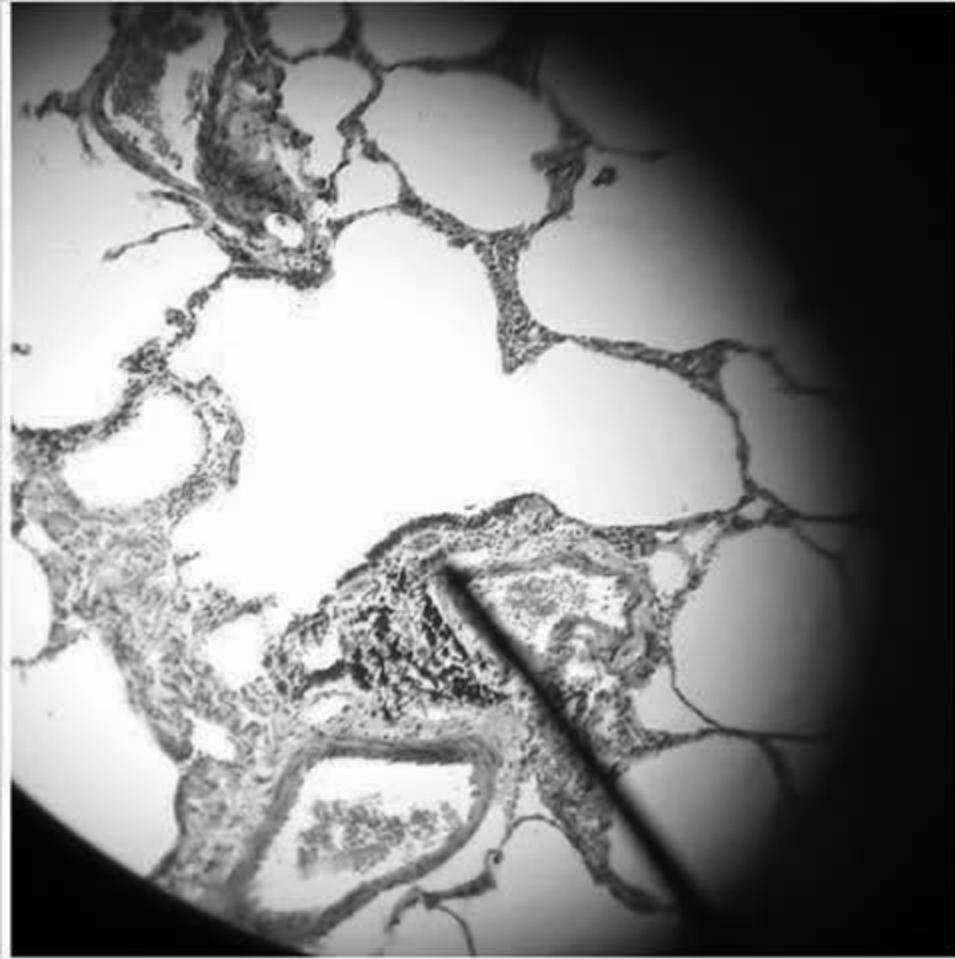
-Pleura.

-Macrophages  
(dust cells)>>  
Black-colored  
cells {see next  
slide}

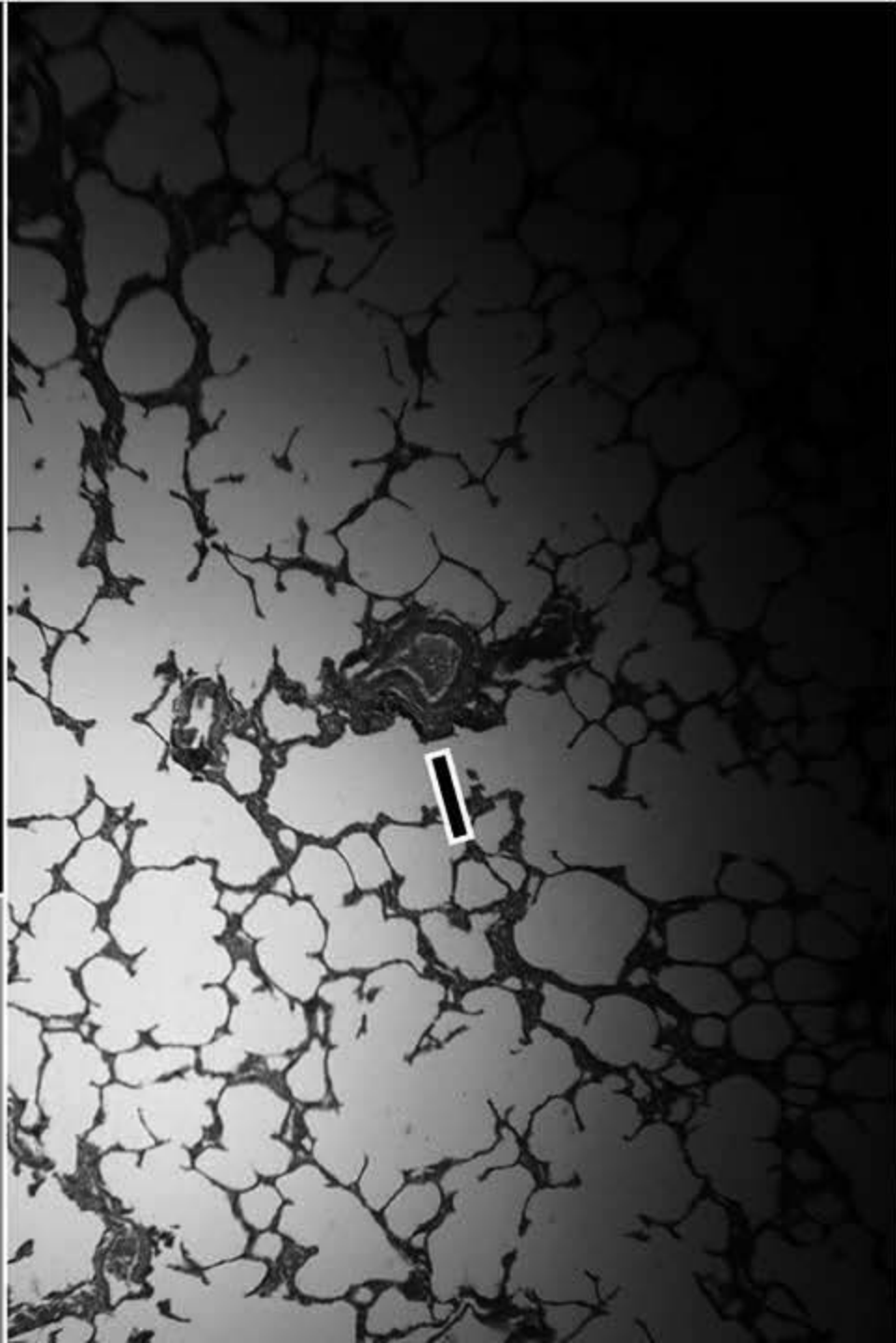




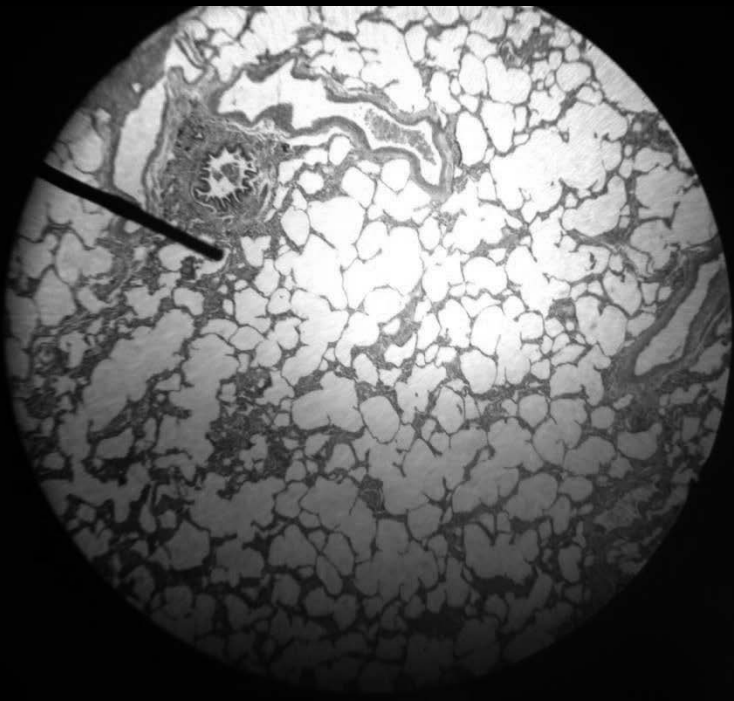
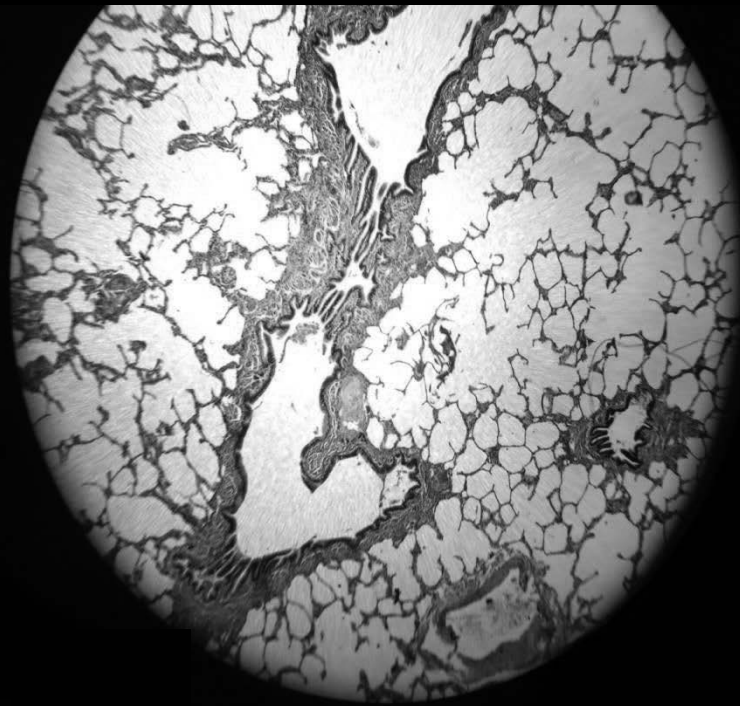
**Dust Cells**



respiratory

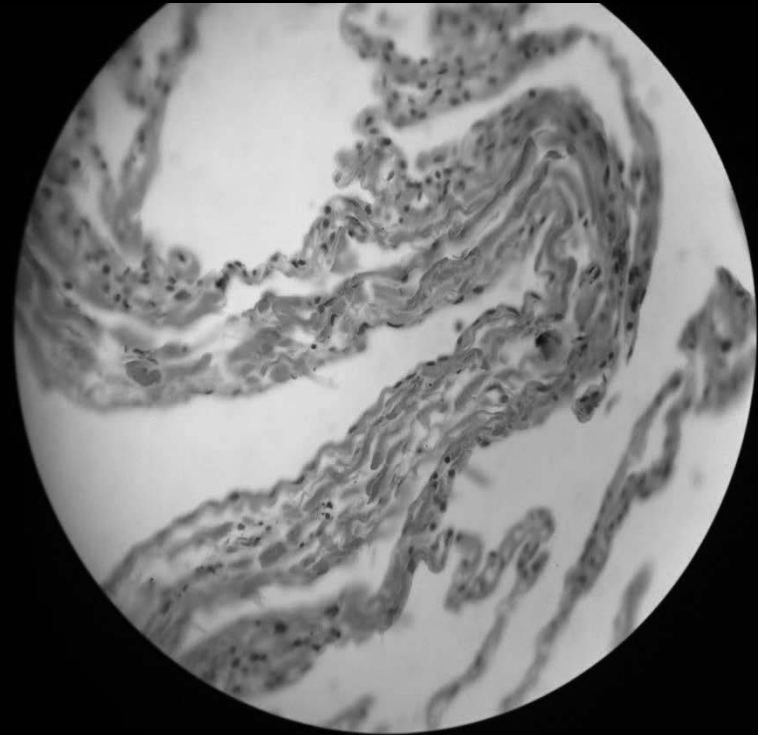


■ Lung Tissue:  
-Respiratory  
Bronchiole.

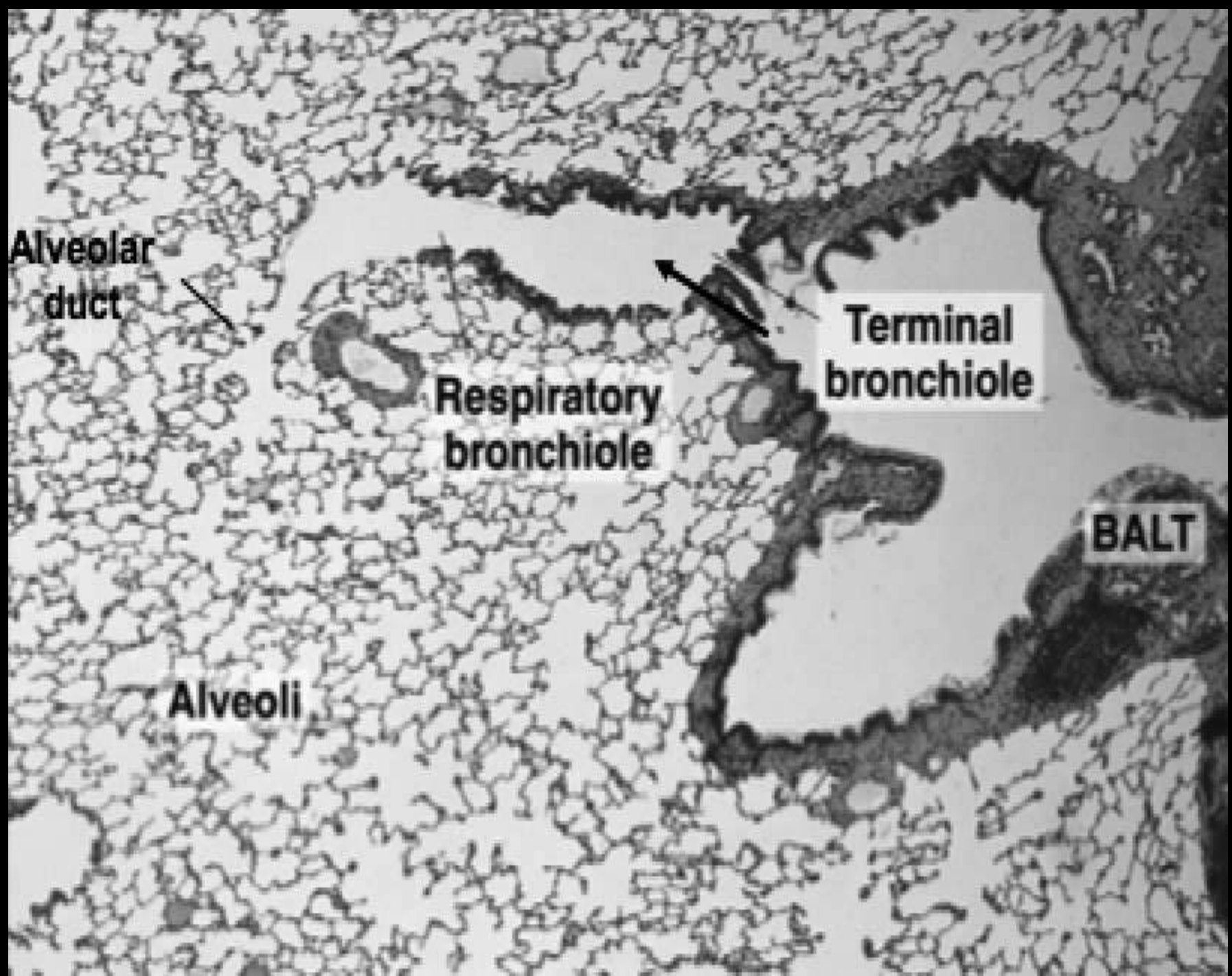


## ▪ Lung Tissue :

- Pleura.
- Bronchiole.
- Alveolar sac.
- Alveoli.
- Macrophages (dust cells).









**GOOD LUCK !**

**YOUR COLLEAGUE, DUHA NAJI**

