

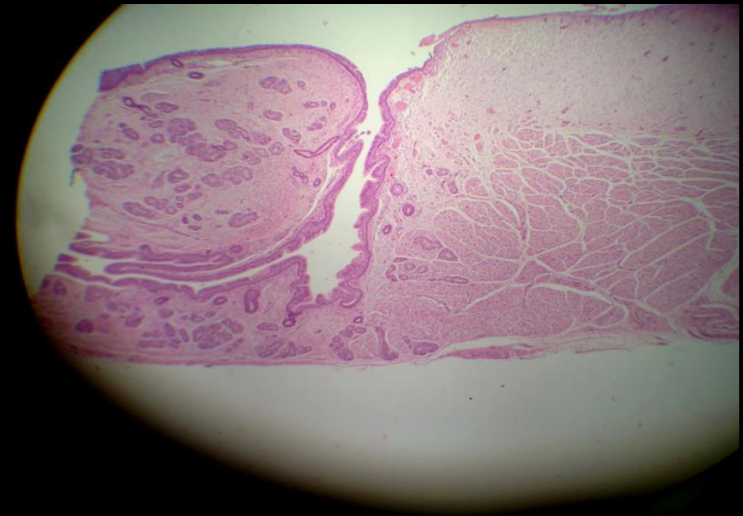


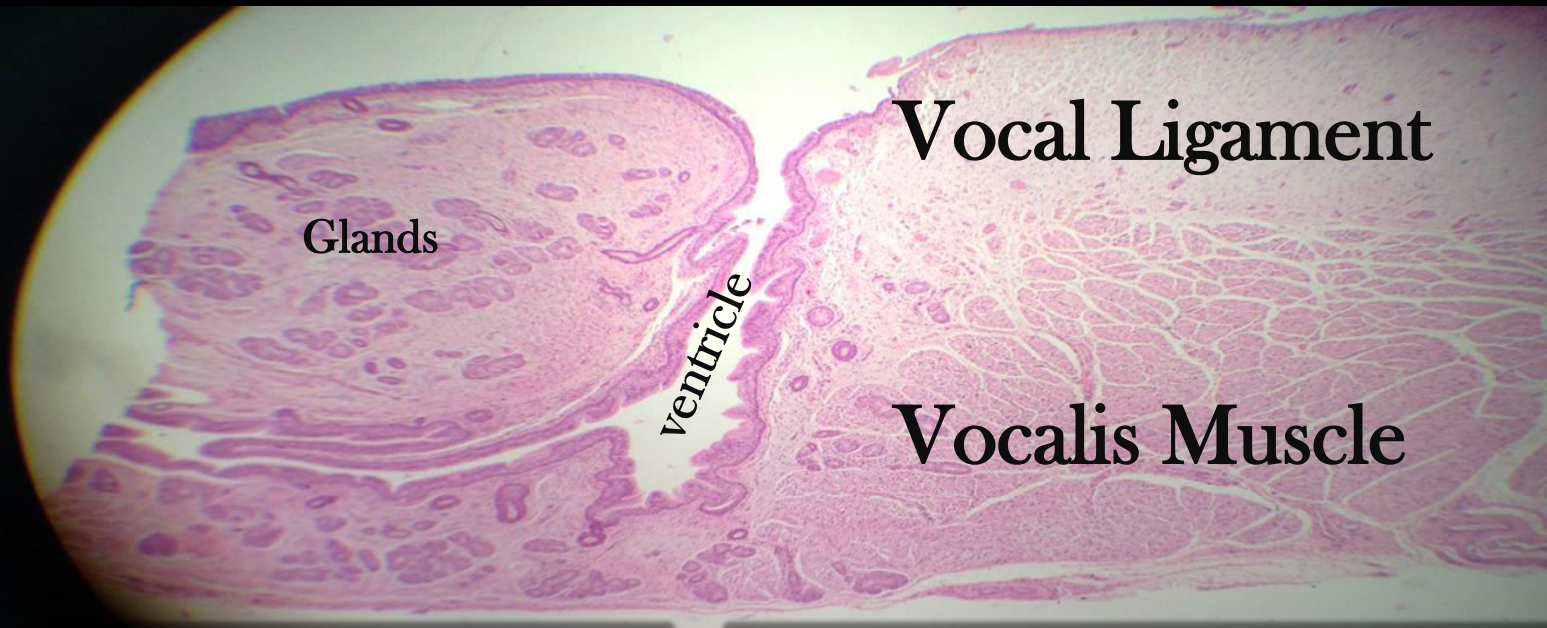
RESPIRATORY SYSTEM

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.



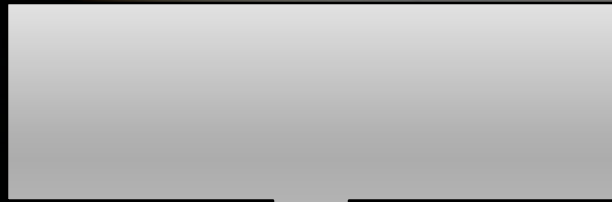


Glands

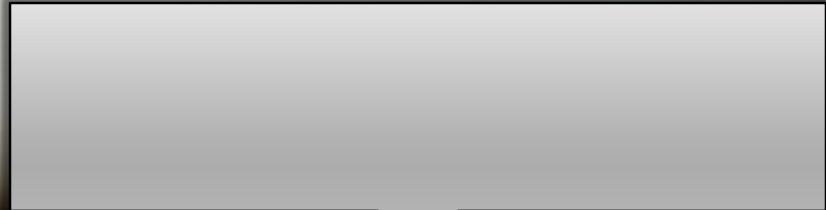
ventricle

Vocal Ligament

Vocalis Muscle



False Vocal Cord



True Vocal Cord

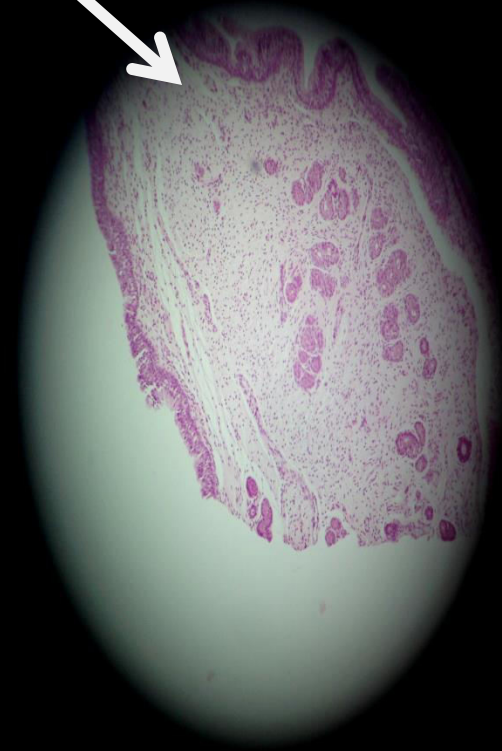
- Larynx:

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



▪ Larynx

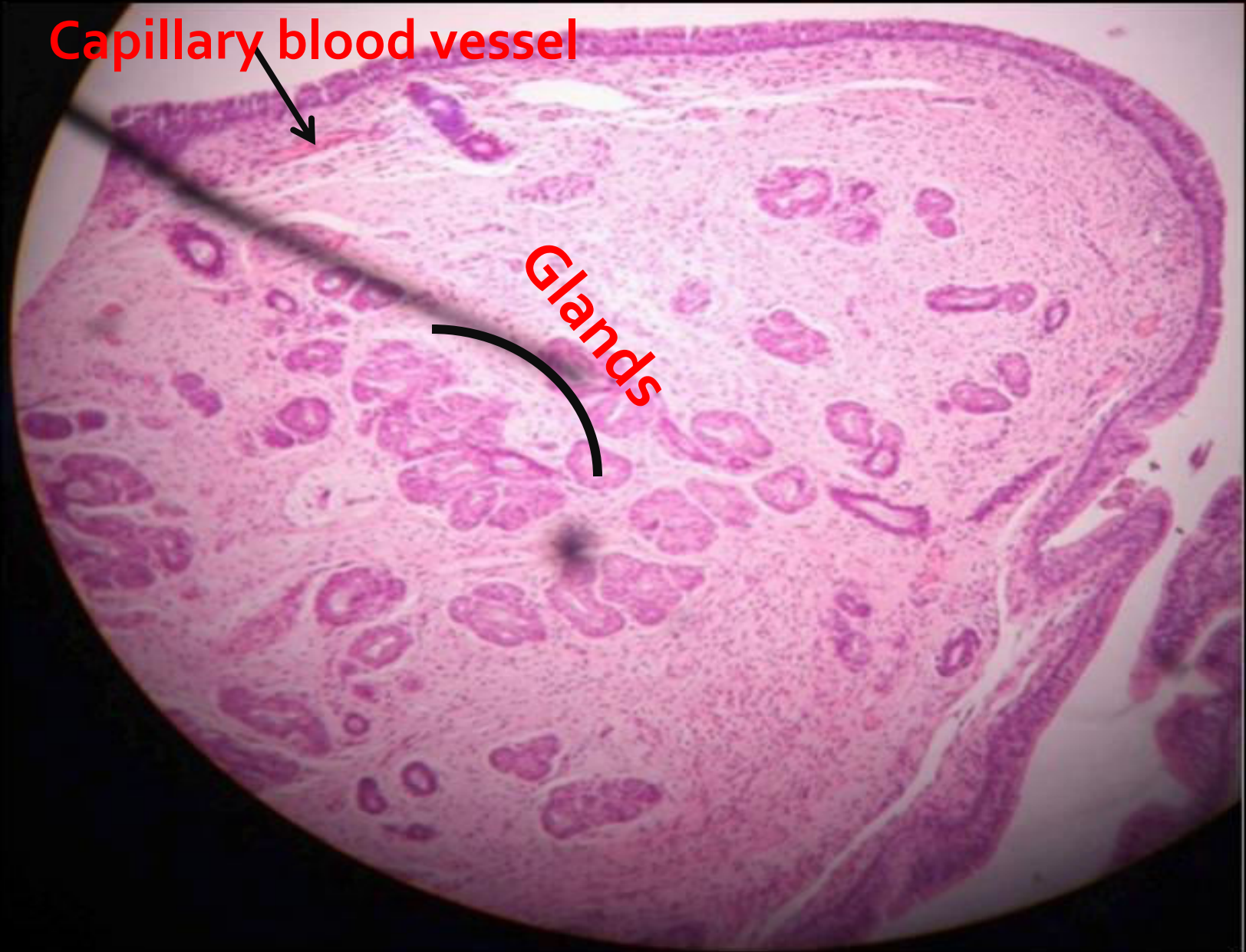
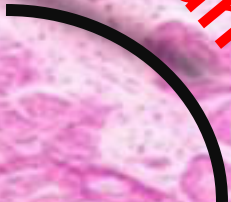
-Vocal Cords: True & False
ventricle



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.

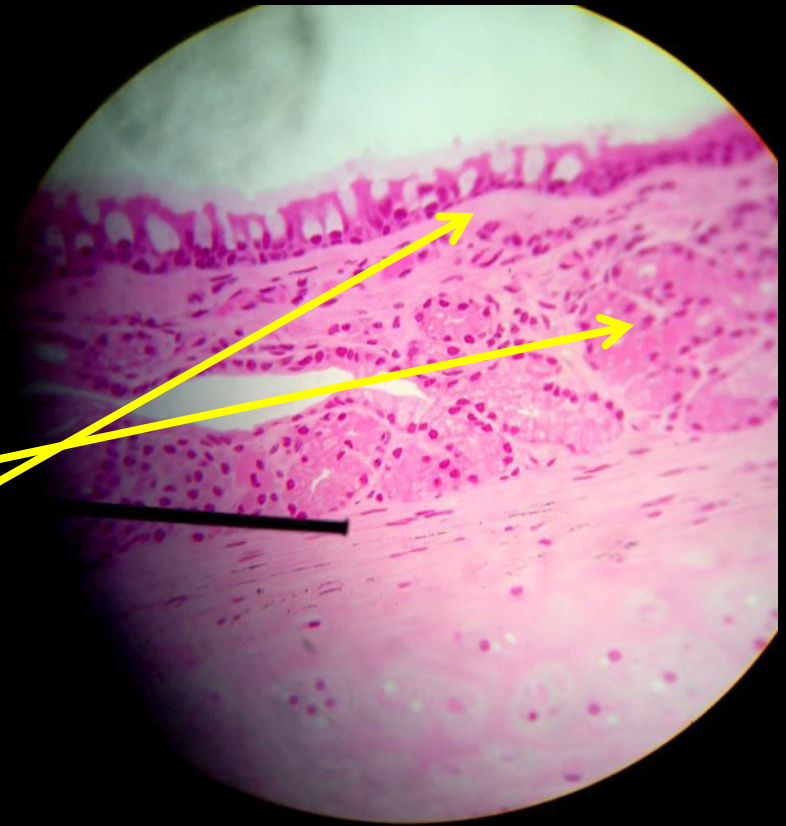
-Look for :

-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)

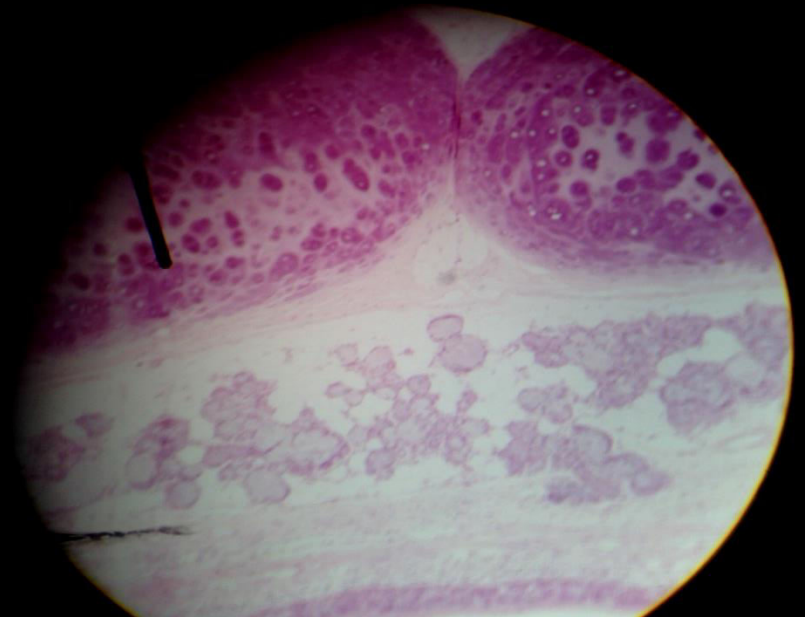
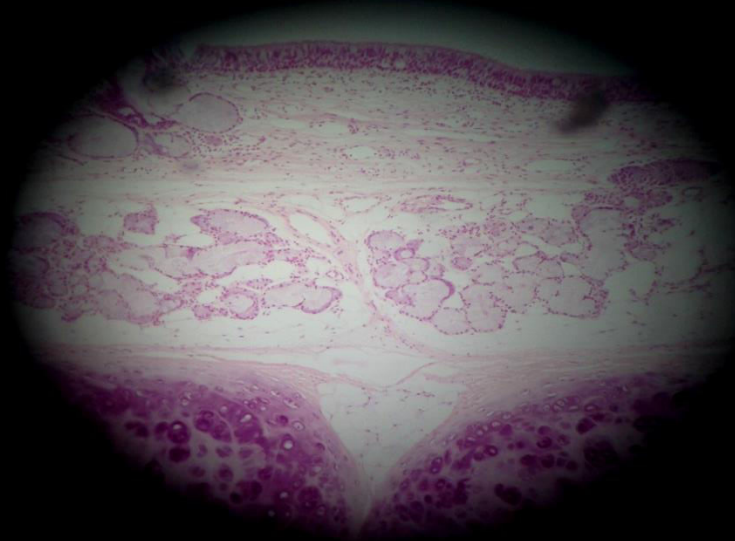


Trachea

C.S.



- Extrapulmonary (Primary) Bronchus.

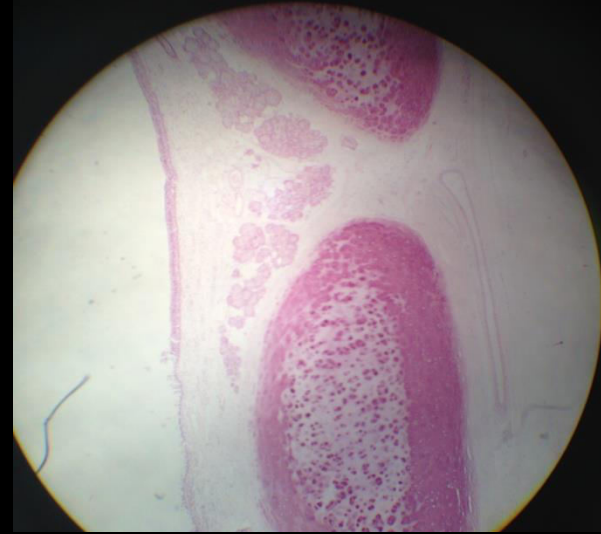


▪ Trachea and Extrapulmonary Bronchus.

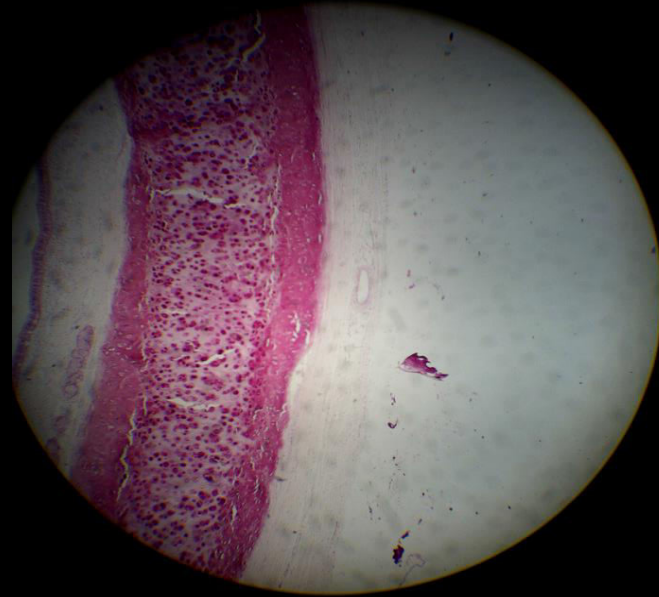
The main difference between them is that:

-Trachea: contains C-shaped cartilage (continuous).

-Primary Bronchus: contains Pieces of cartilage around the circumference (Discontinuous).



Extrapulmonary
Bronchus



Trachea

▪ Lung Tissue

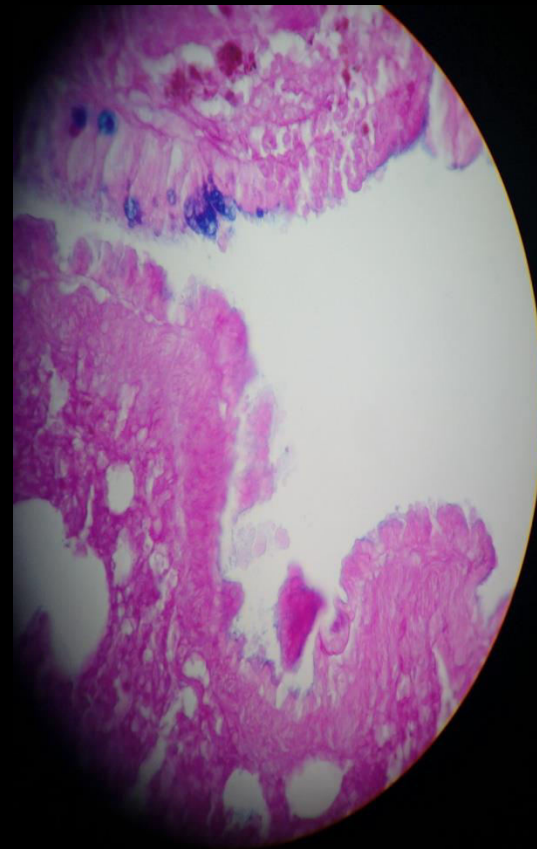
-Special Stain
(PAS)

-Intrapulmonary
Bronchi.

-Look for:

-Cartilage.

-Goblet Cells.

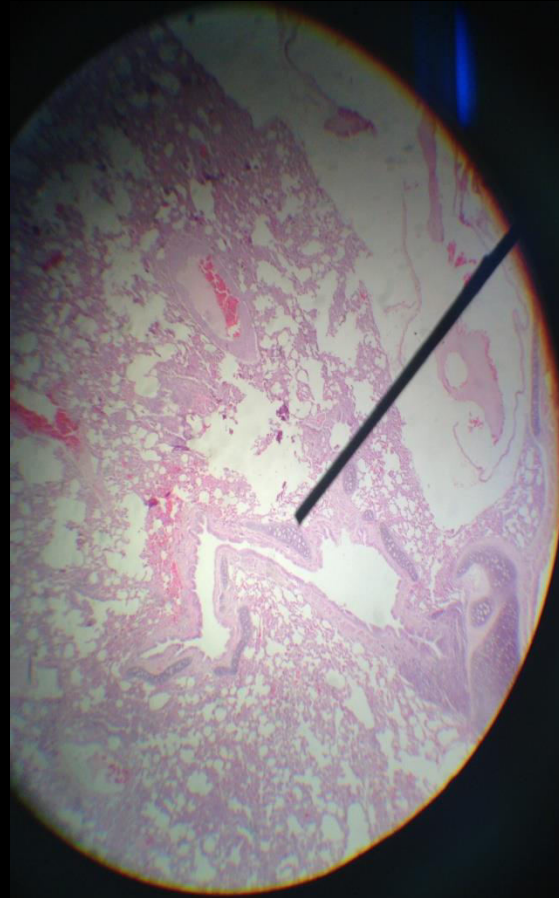


▪ Intrapulmonary Bronchus.

- 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).

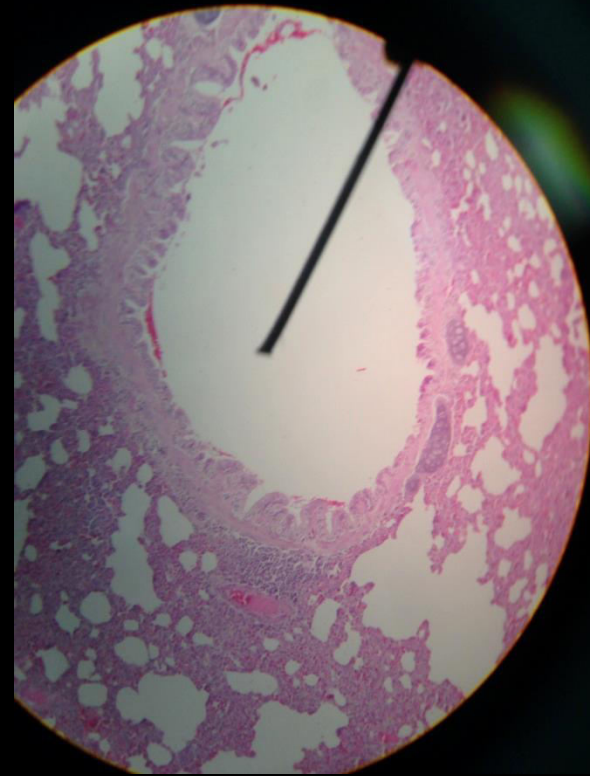


- Intrapulmonary
Bronchus.
(secondary)

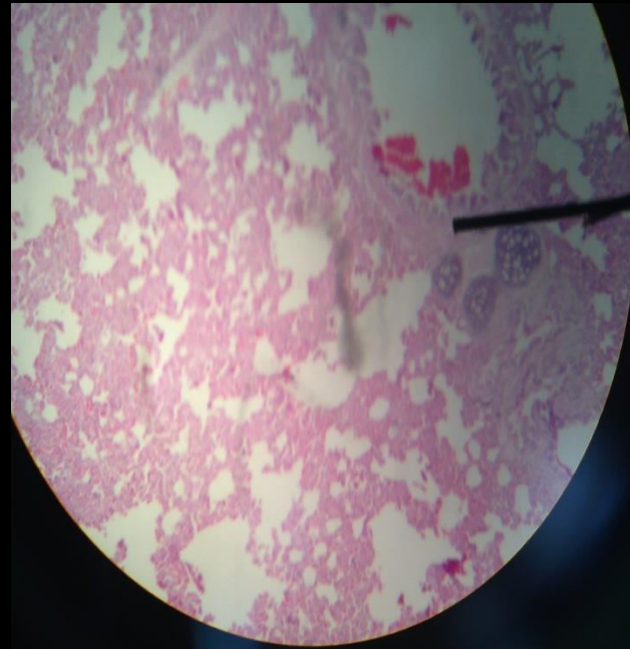
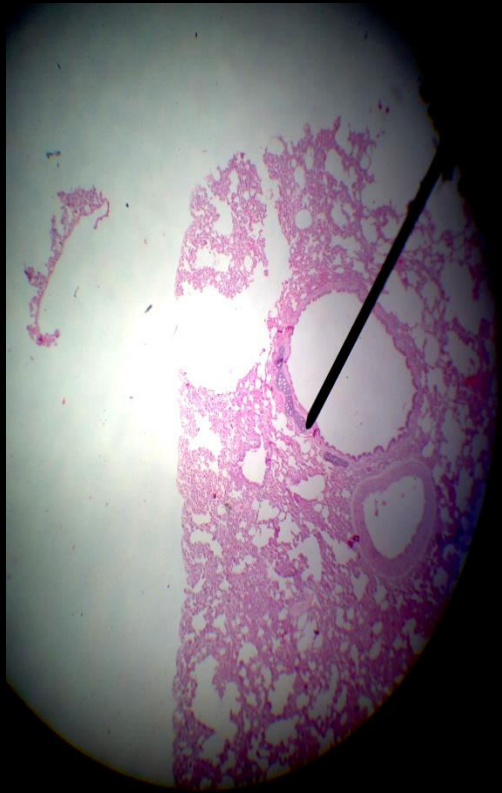


▪ Intrapulmonary
Bronchus.

- 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.

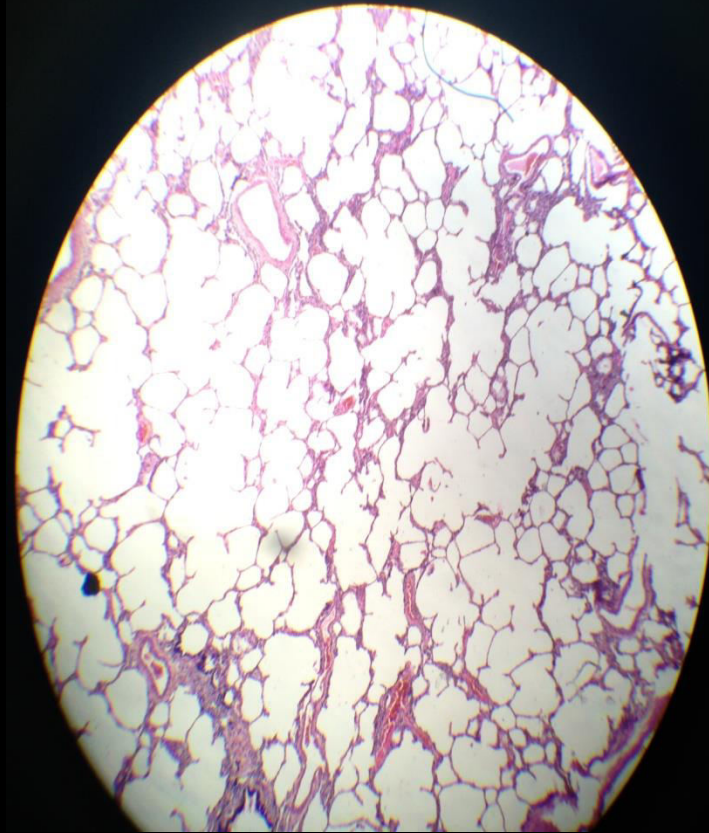


- Intrapulmonary (Tertiary) Bronchus.



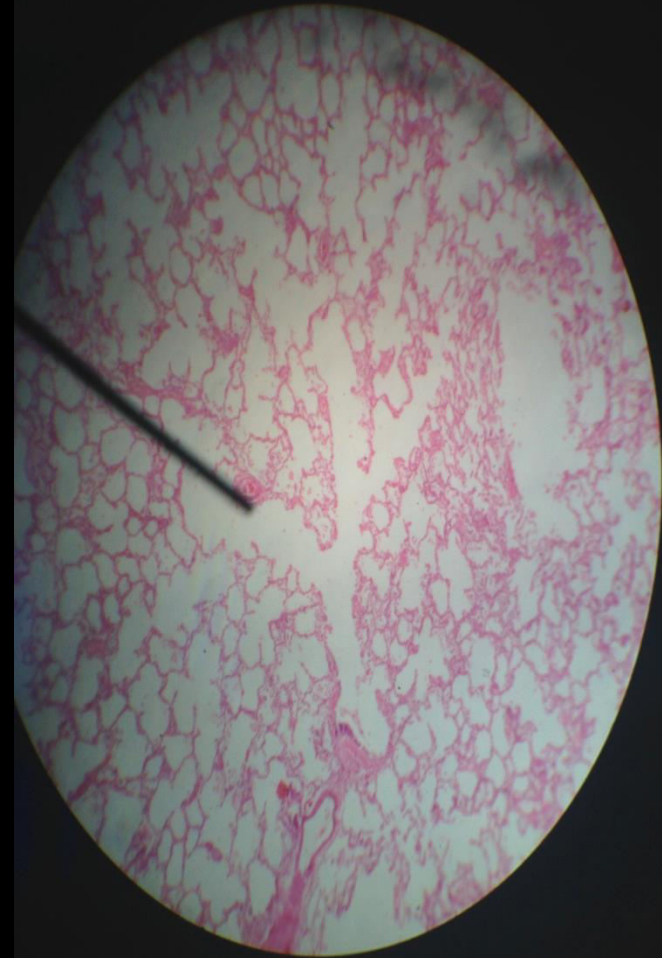
■ Lung Tissue:

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



■ Lung Tissue :

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



▪ Lung Tissue:

-Alveolar duct.

-Alveolar sac.

-Alveoli.

-Cells:

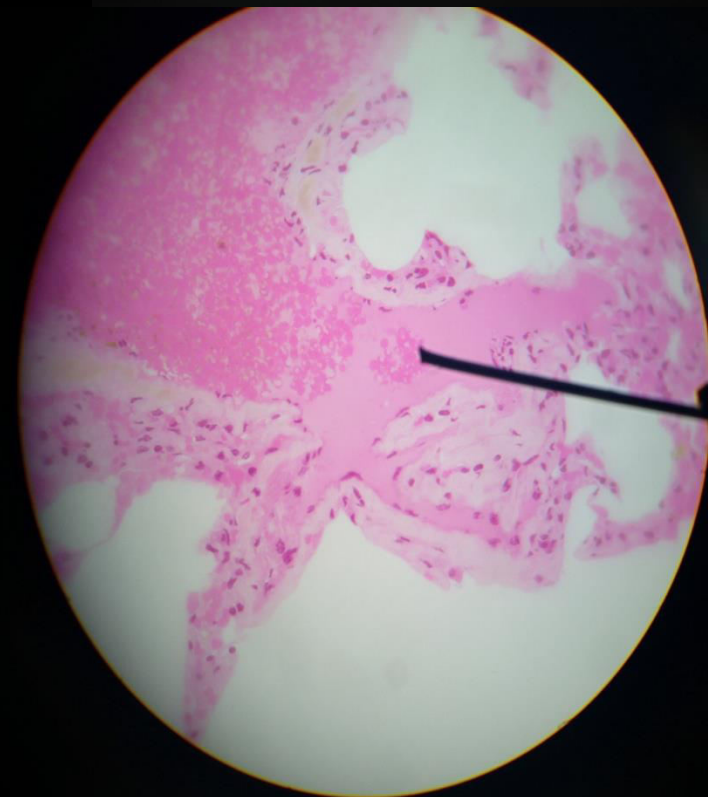
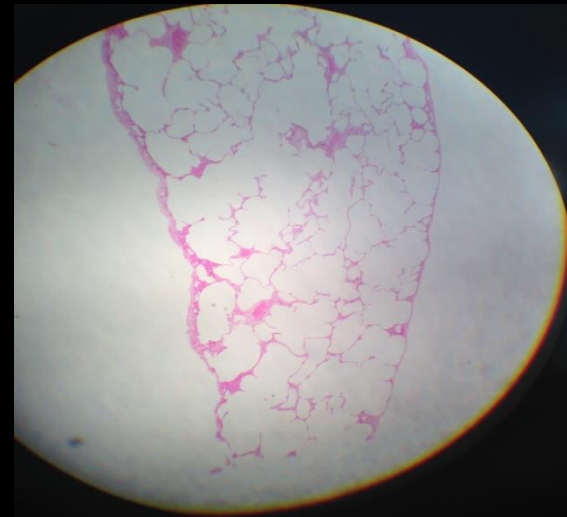
Type 1.

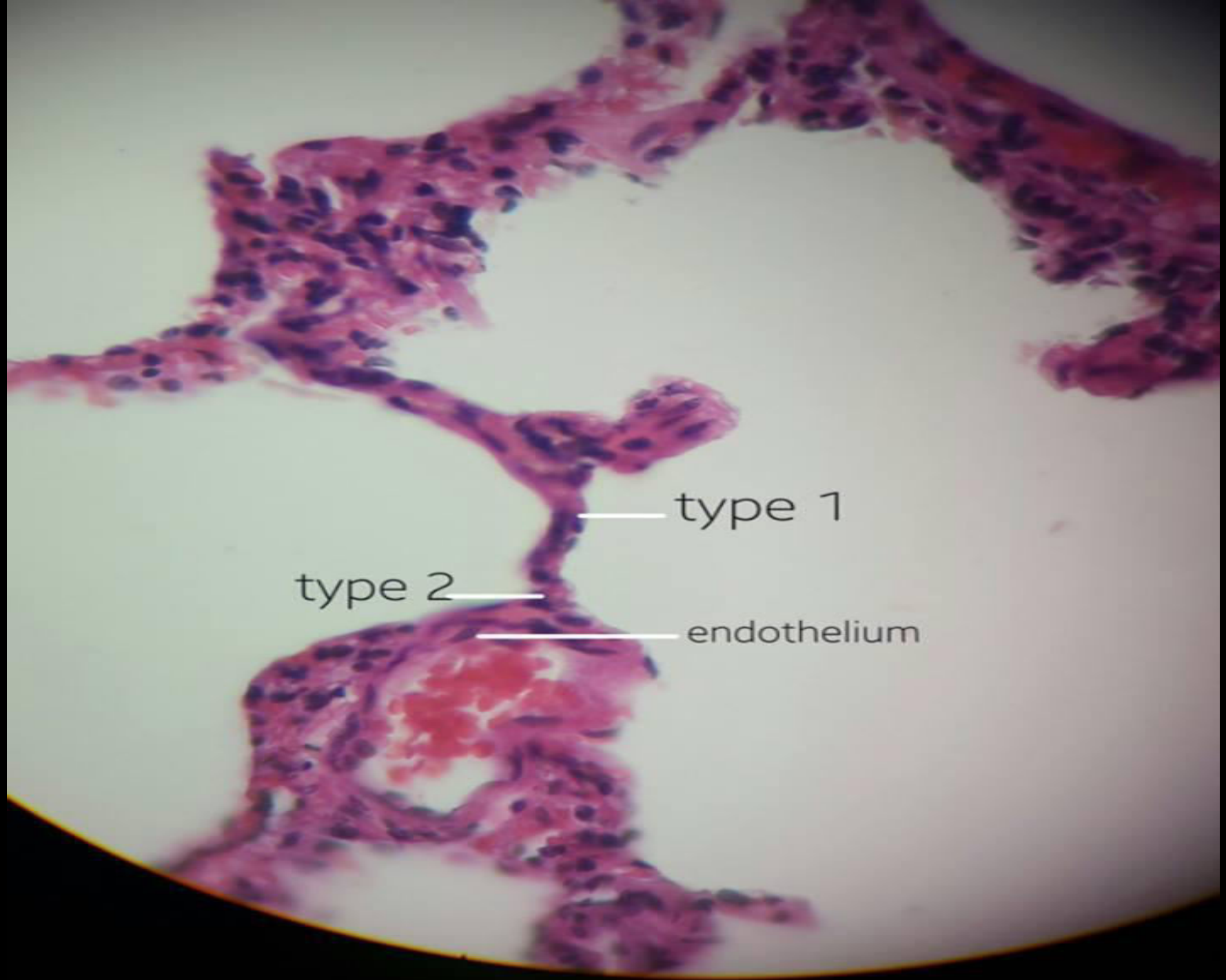
Type 2.

Endothelial .

-Pleura.

-Mesothelium.





type 1

type 2

endothelium

■ Lung Tissue:

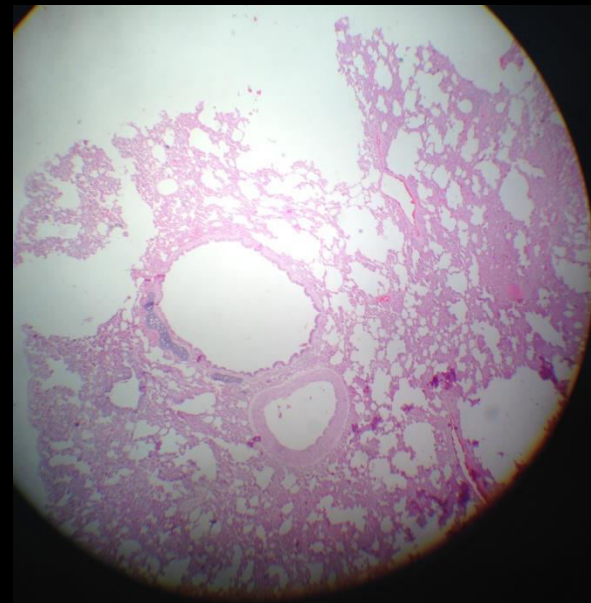
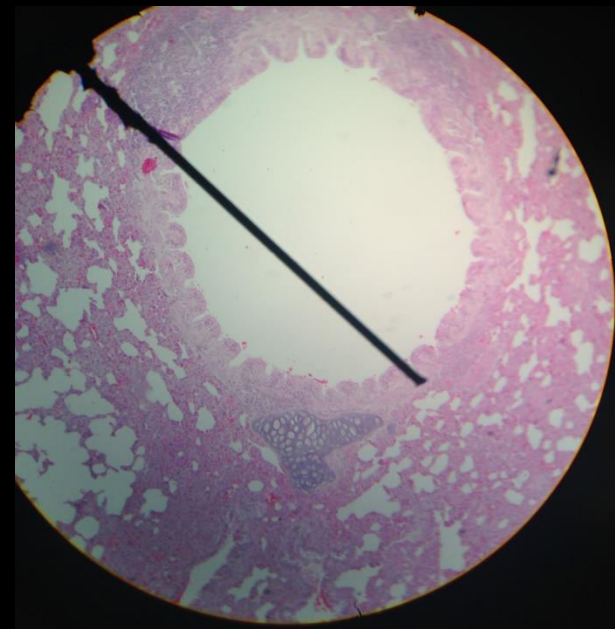
- Terminal Bronchiole.
- Alveolar duct.
- Alveolar sac.
- Alveoli.



- Lung Tissue:

- Bronchi.

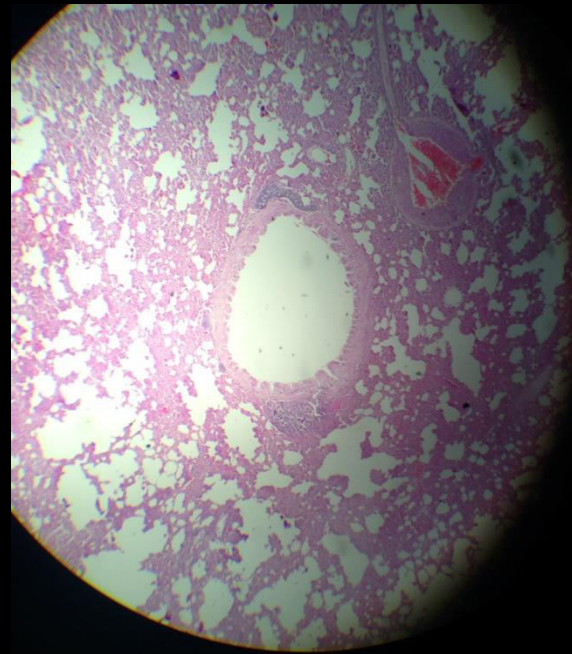
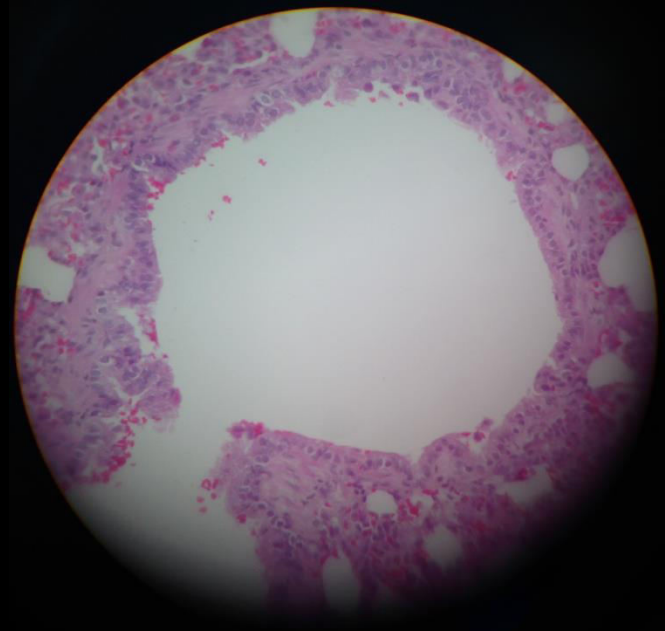
- Terminal bronchiole.



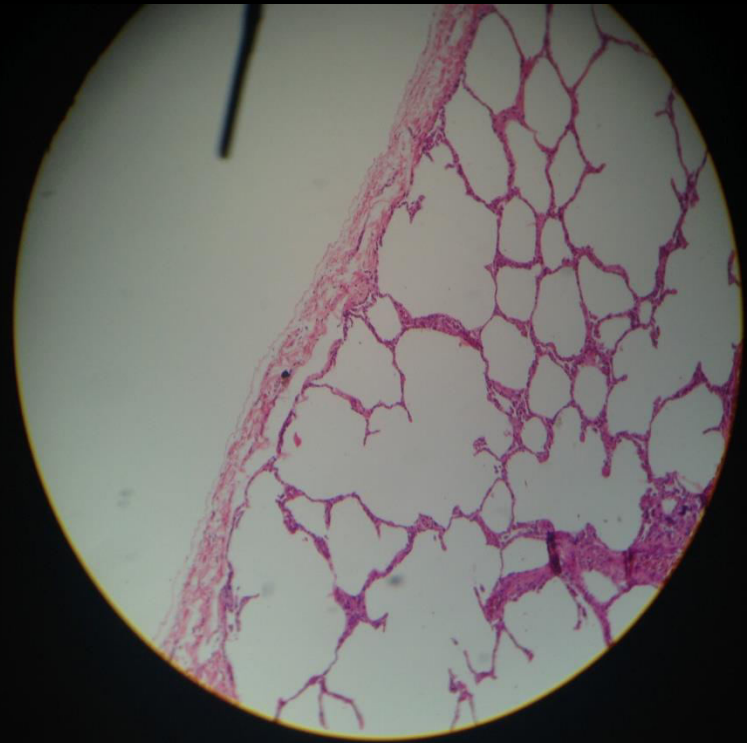
■ Lung Tissue:

-Bronchi.

-Terminal
bronchiole

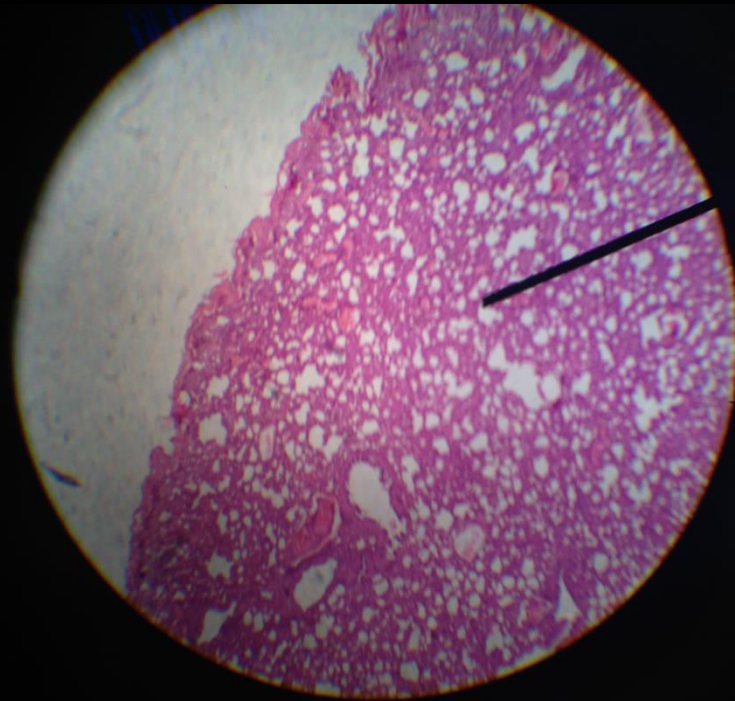


■ Lung Tissue



■ Lung Tissue:

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



■ Lung Tissue:

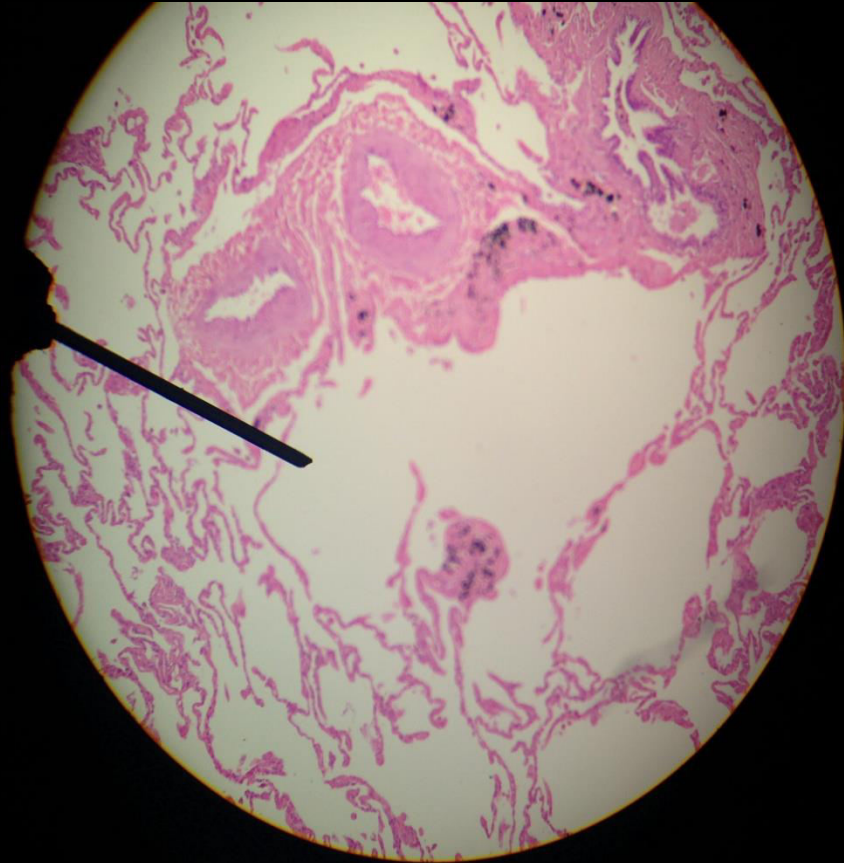
-Bronchiole.

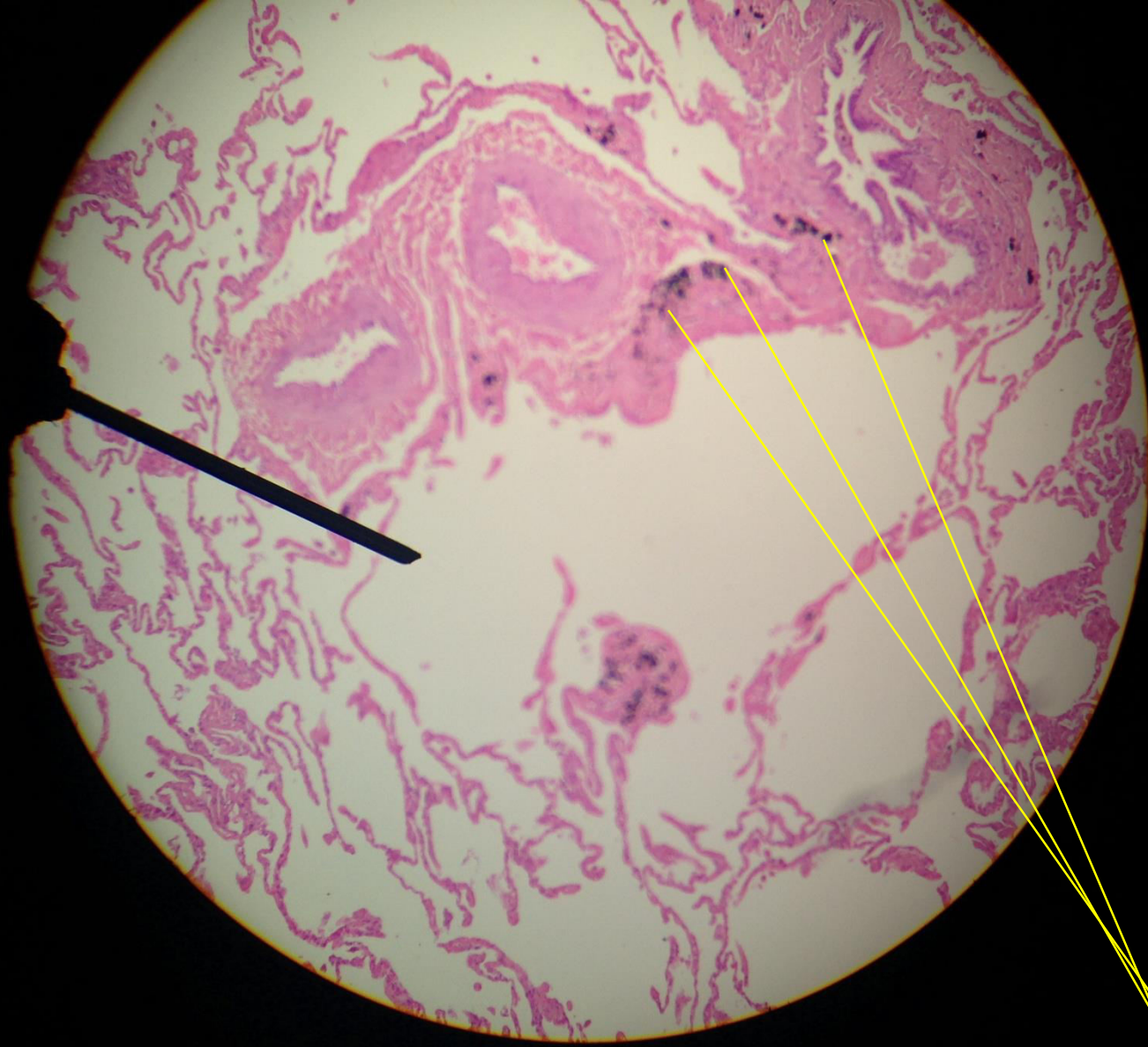
-Pleura.

-Macrophages

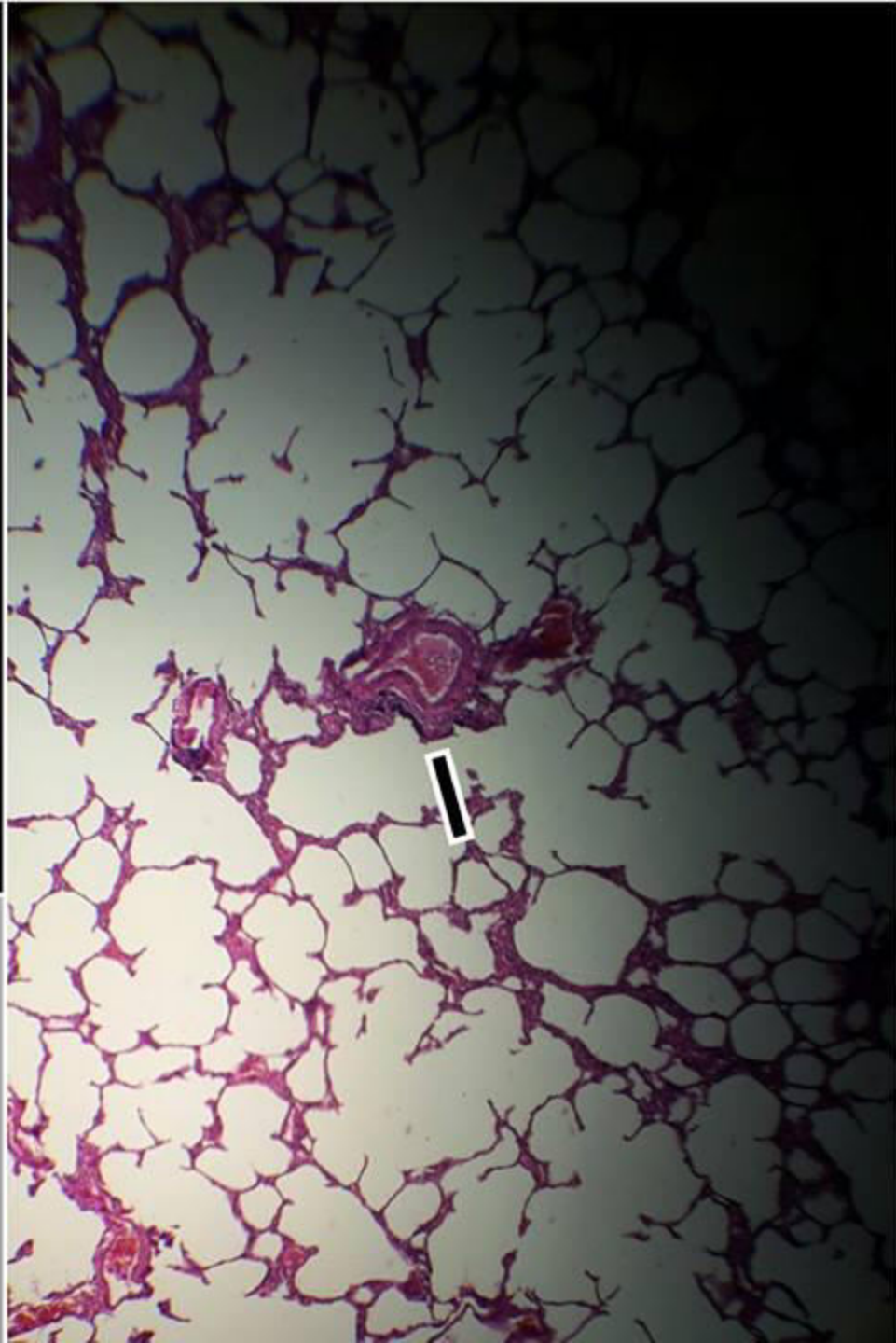
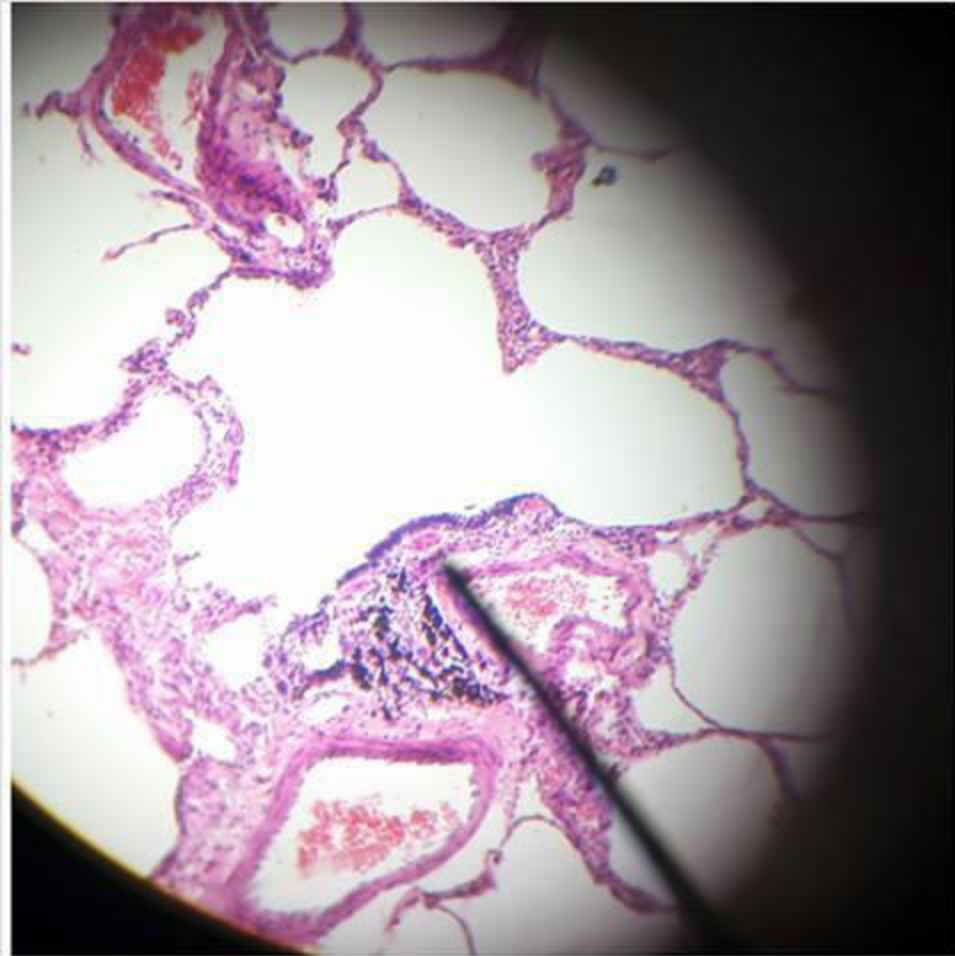
(dust cells)>>>

Black-colored
cells {see next
slide}



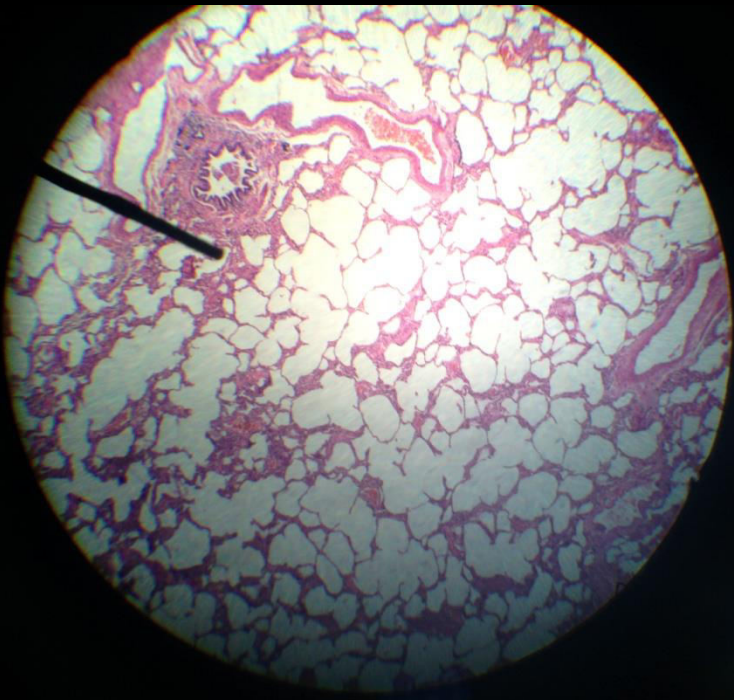
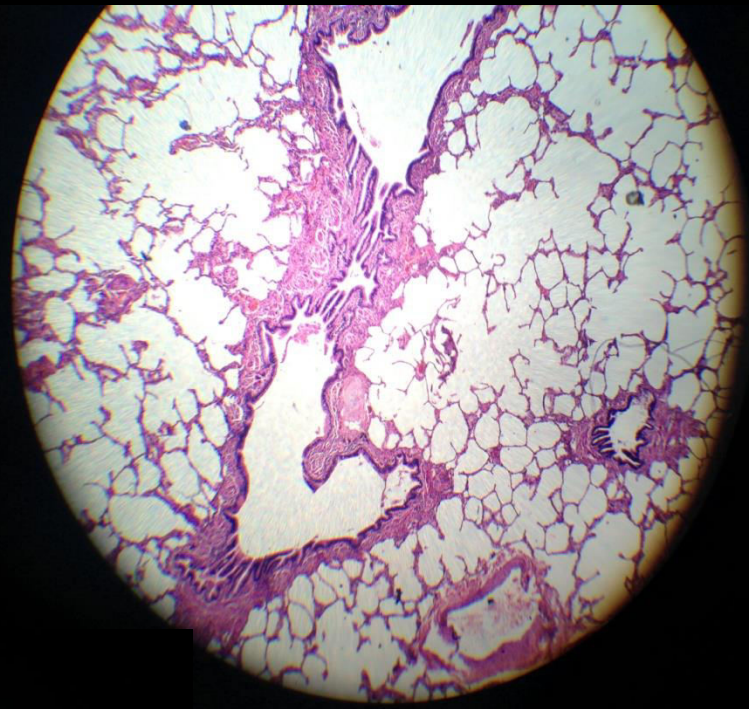


Dust Cells



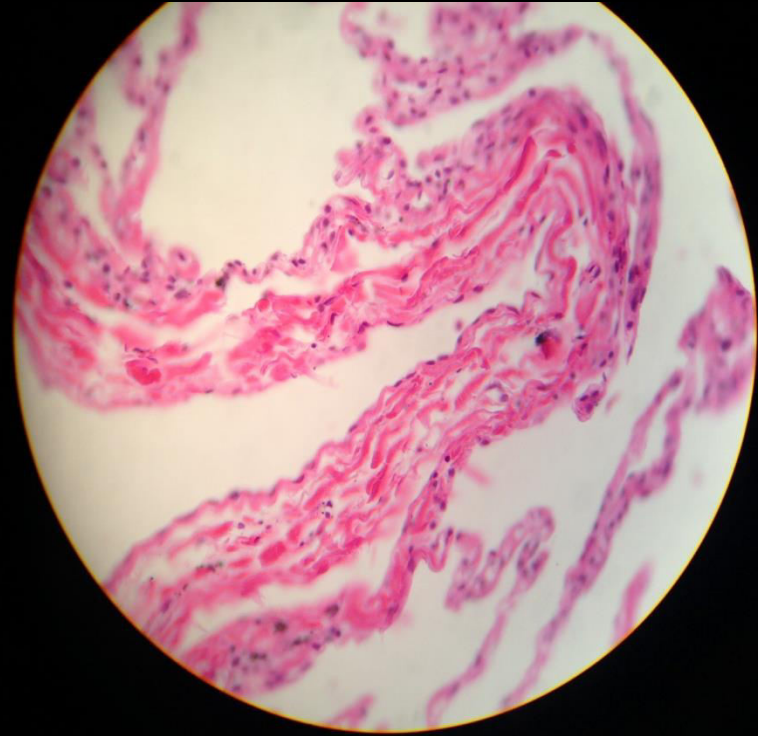
respiratory

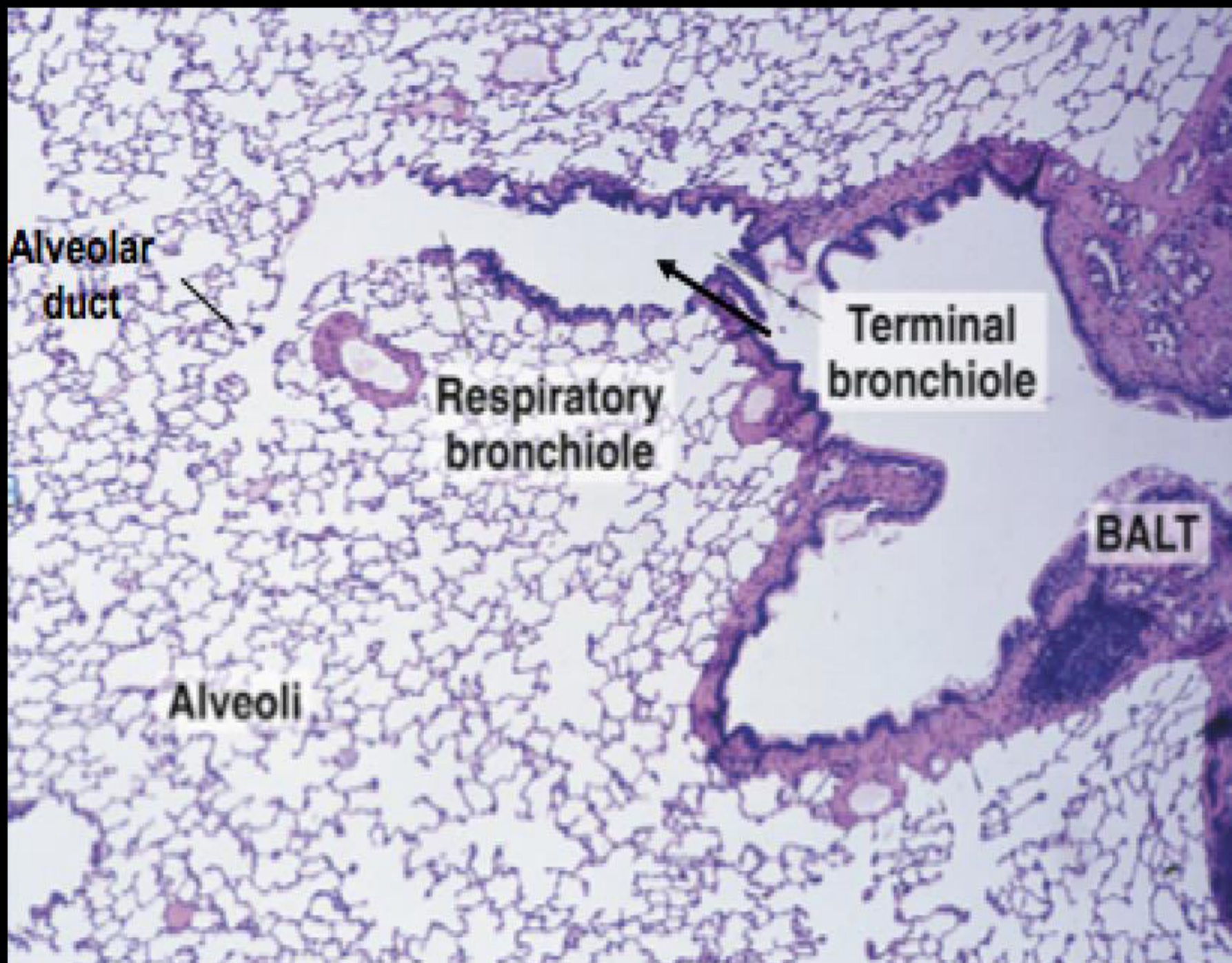
▪ Lung Tissue:
-Respiratory
Bronchiole.



■ Lung Tissue :

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





Alveolar duct

Terminal bronchiole

Respiratory bronchiole

Alveoli

BALT



GOOD LUCK !

YOUR COLLEAGUE, DUHA NAJI