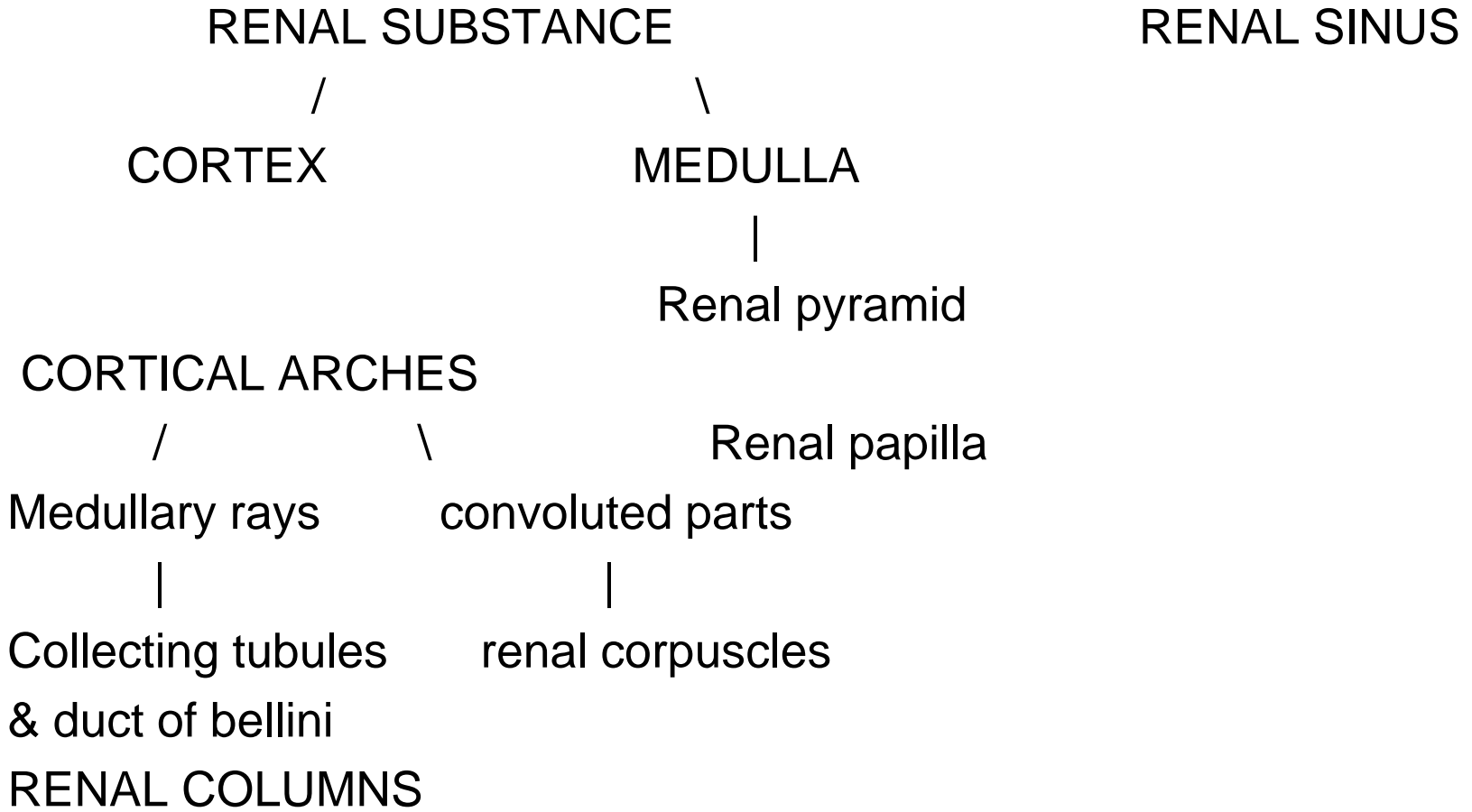


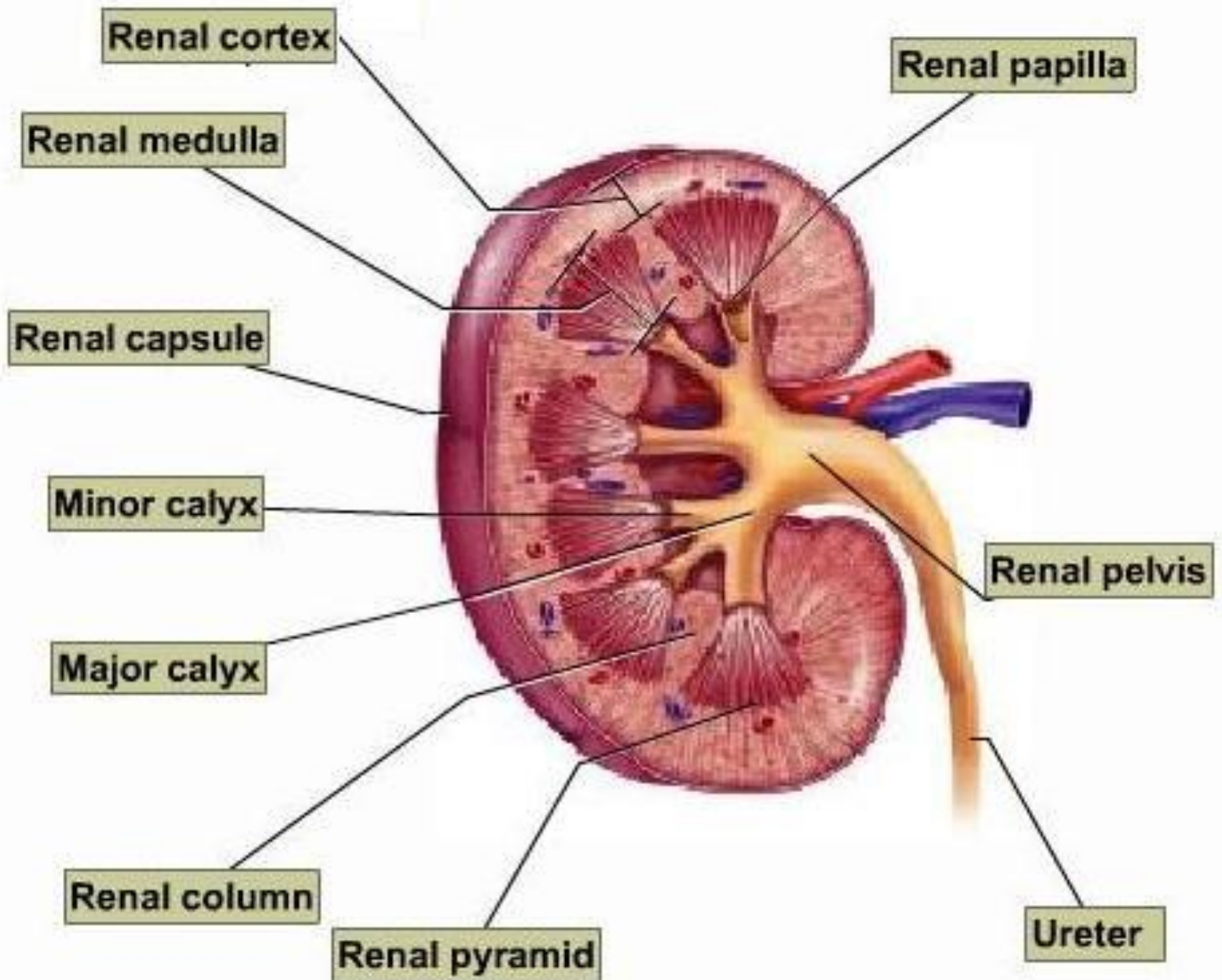
URINARY SYSTEM

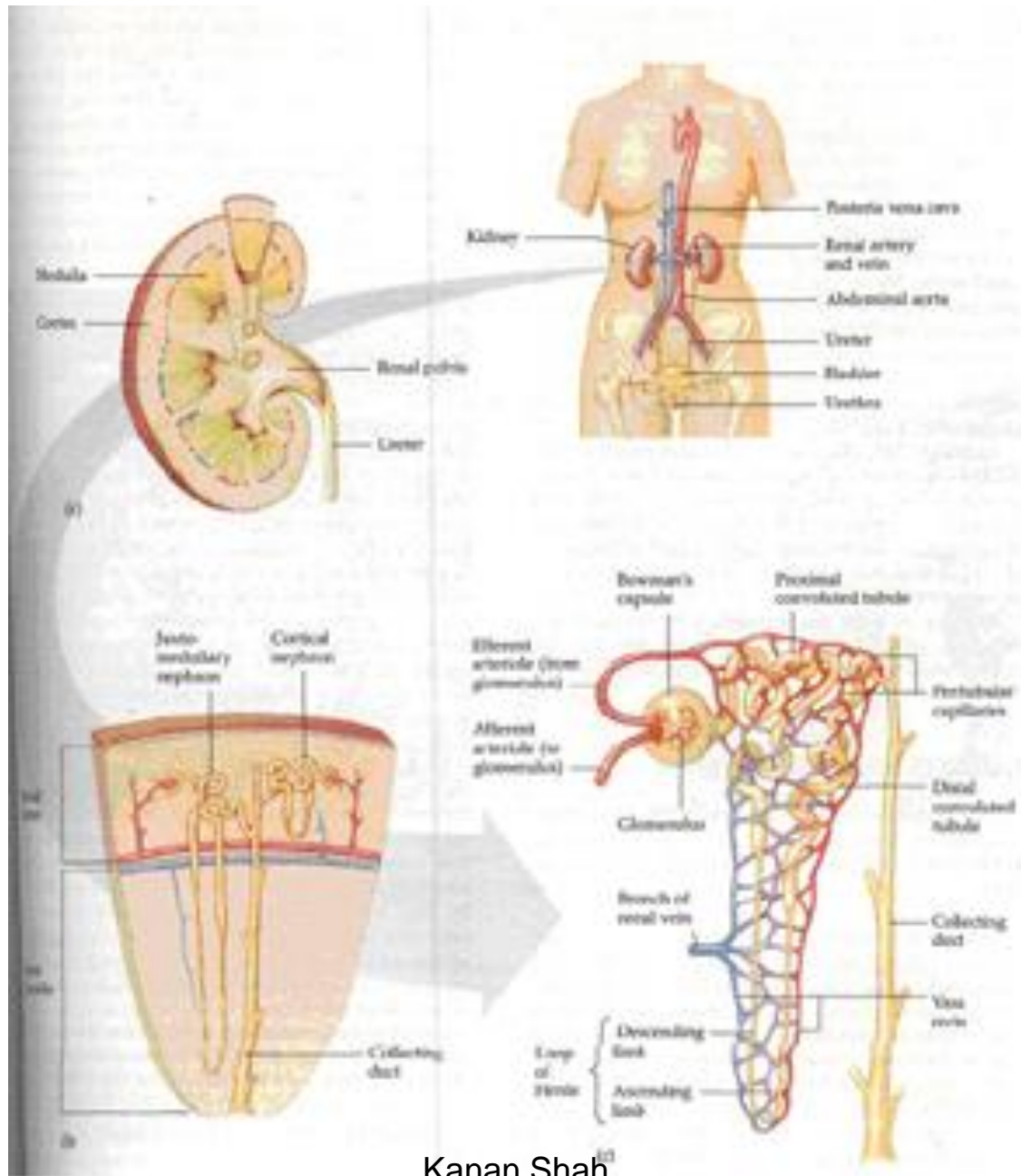
IT INCLUDES KIDNEY , URETER , URINARY
BLADDER , URETHRA .

KIDNEY

- MACROSCOPIC :







NEPHRON

/ \

RENAL CORPUSCLES

(FILTRATION)

MALPIGHIAN BODY

|

Glomerular plexus of capillaries

& Bowman's capsule

|

Mesangial cell

Podocyte

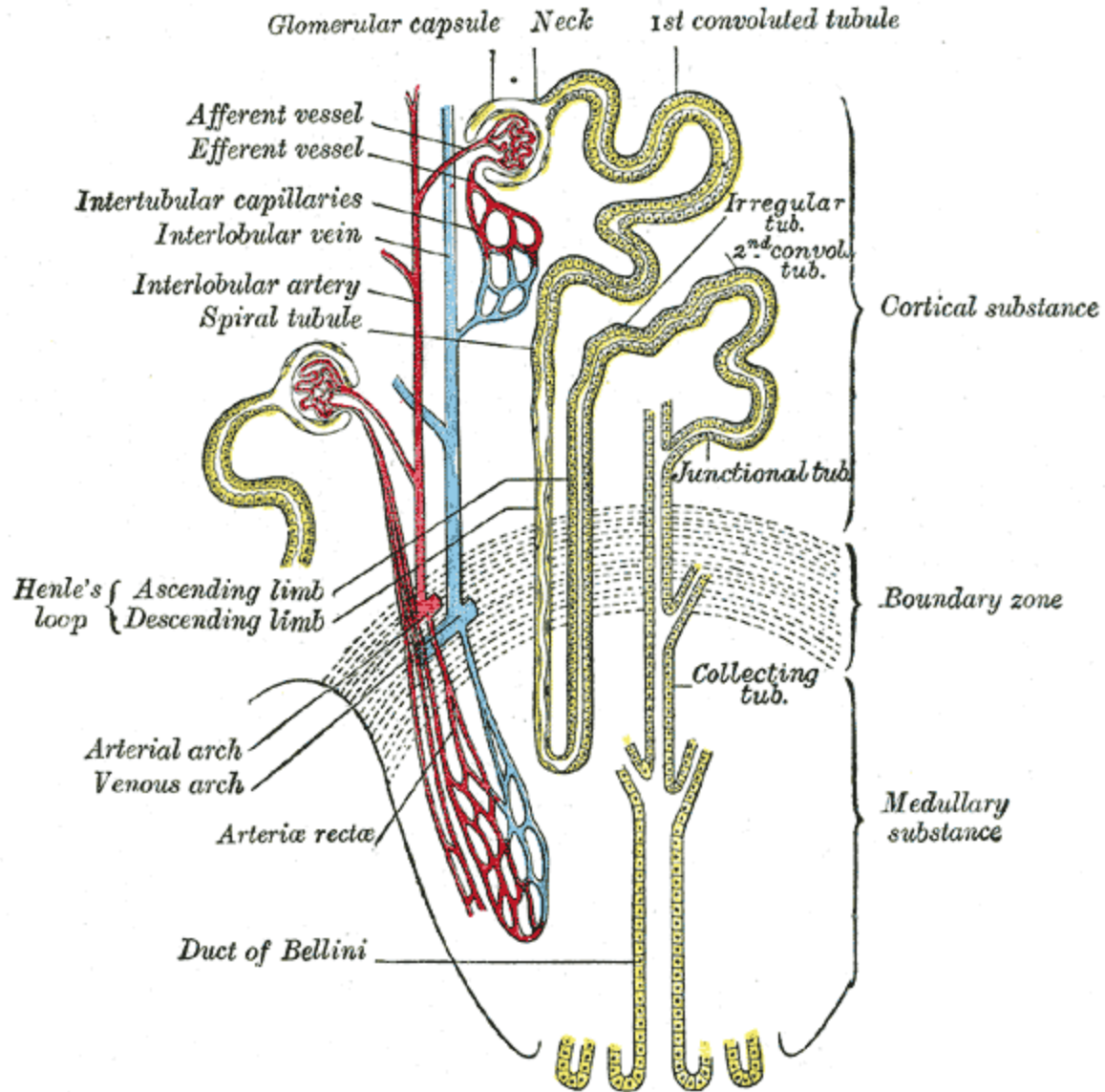
RENAL TUBULES

(SELECTIVE REABSORPTION)

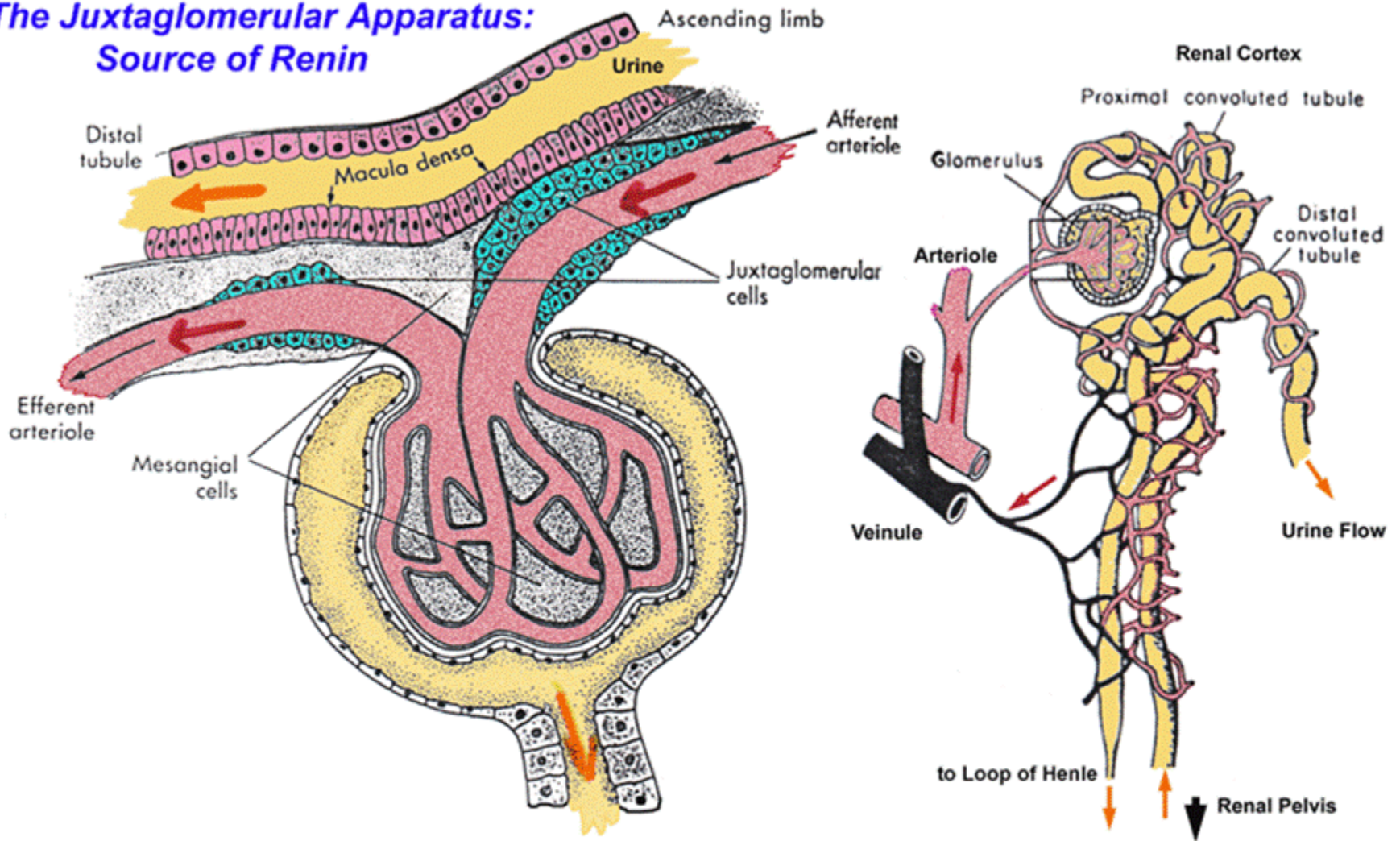
|

PCT, LOOP OF HENLE, DCT

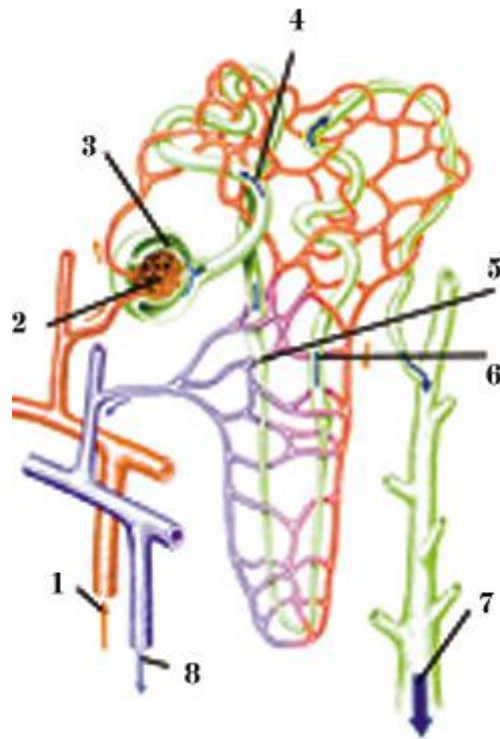
JUXTA GLOMERULAR APPARATUS: MACULA Densa,
LASIC CELLS, JUXTA GLOMERULAR CELLS

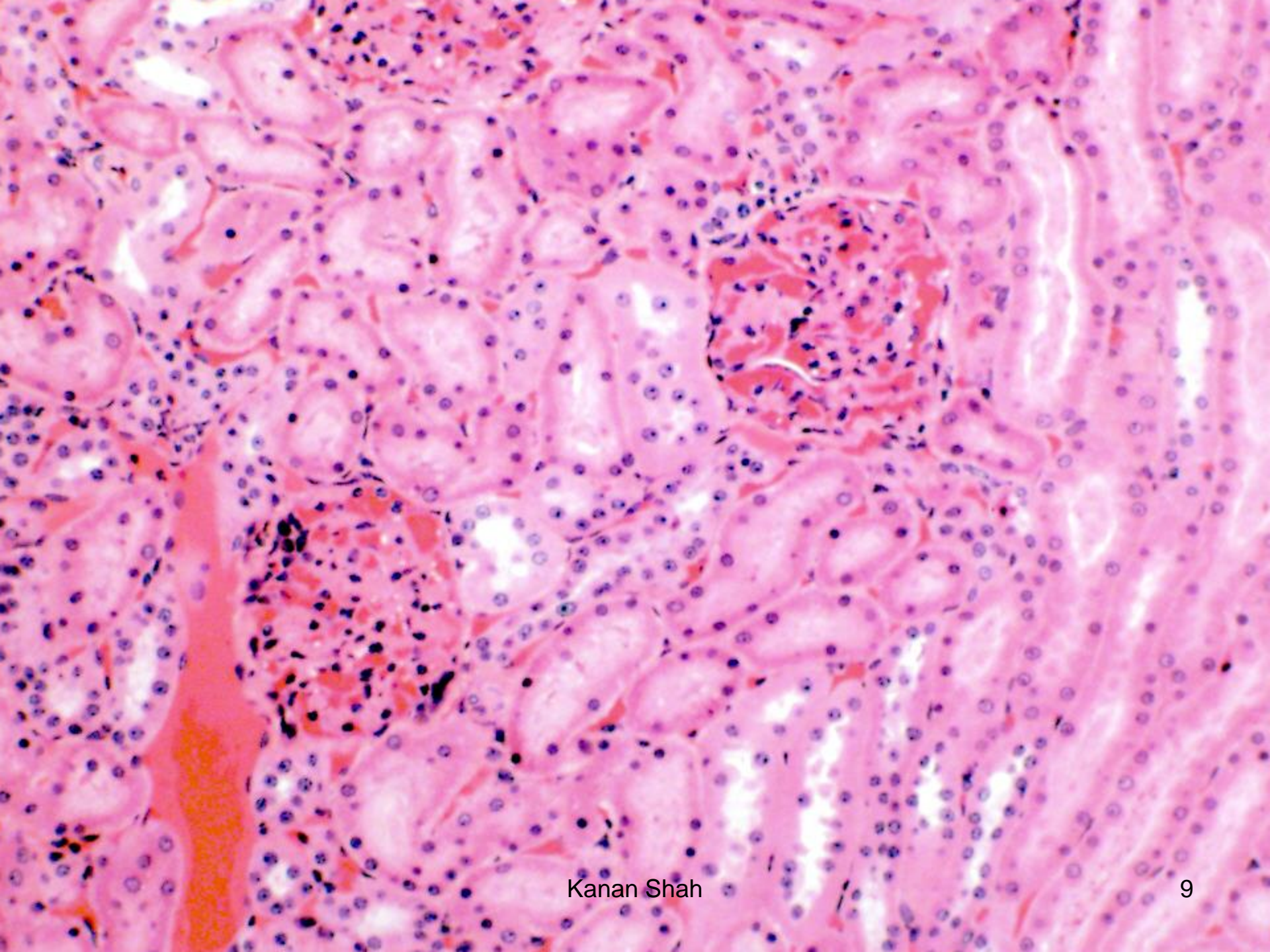


The Juxtaglomerular Apparatus: Source of Renin

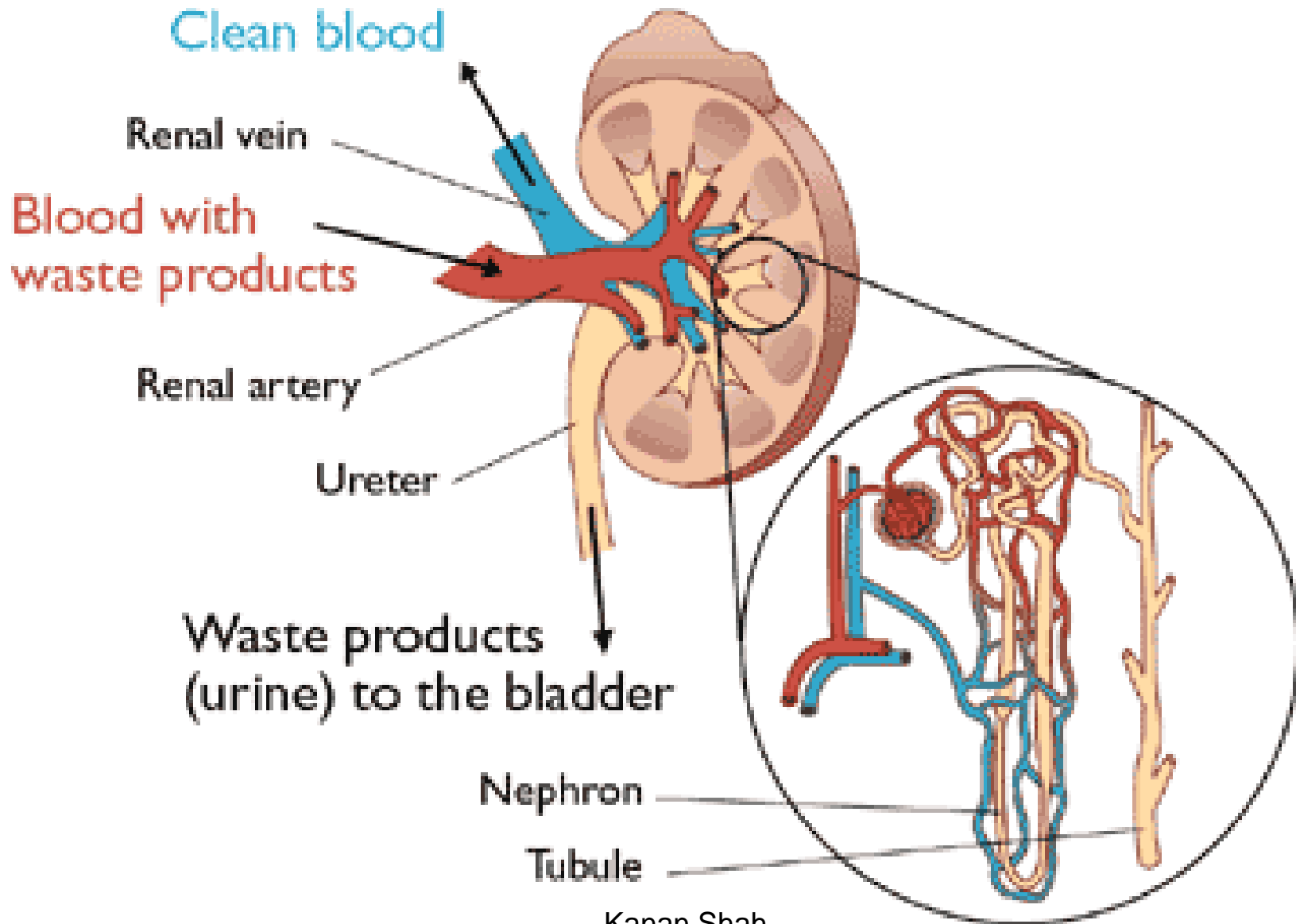


Left modified from Figure 47-4, p786, in Robert M. Berne & Matthew N. Levy, *Physiology*, 2nd Ed., C.V. Mosby Co.: St. Louis, MO, 1988; right modified from Figure 15.9, p373, in Mac E. Hadley, *Endocrinology*, 5th Ed., Prentice Hall: Upper Saddle River, NJ, 2000.





How the kidney works



Proximal convoluted tubule

- 60 μm in diameter
- Single layer of truncated columnar epithelium rest on basement membrane. acidophilic cytoplasm , nucleus basal in position , brush border
- Functions – active reabsorption of glucose, amino acids , sodium , calcium , chloride , phosphate and bicarbonate back to blood. Obligatory reabsorption of water.

Loop of henle

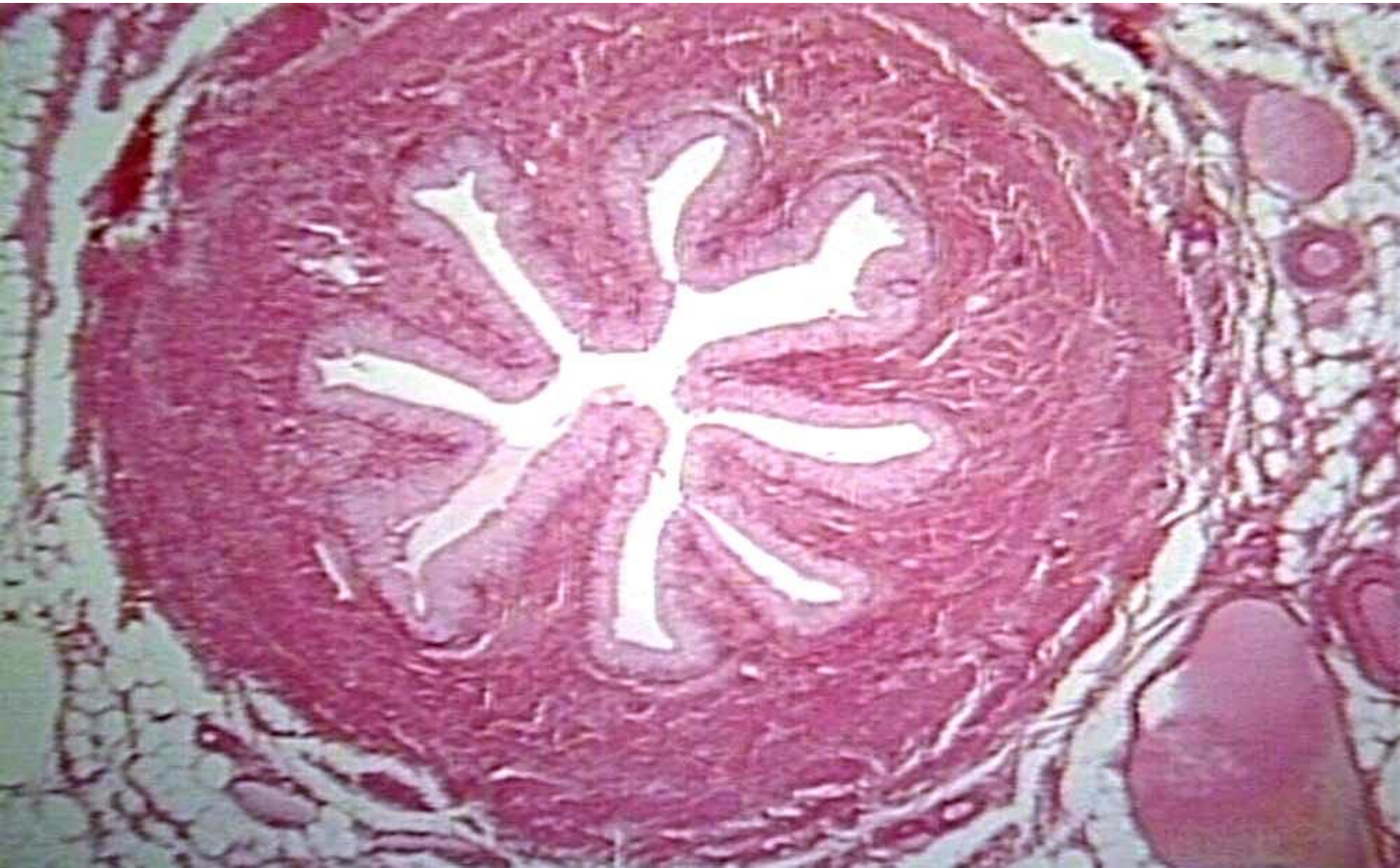
- Functions : ascending limb pump out chloride ion.
descending limb diffuses water out.
Maintain graded osmolarity of interstitial fluid
of pyramid

DISTAL CONVOLUTED TUBULE

- 30 μm in diameter.
- Lined by cuboidal epithelium.
- Basophilic cytoplasm, devoid of brush border.
- Functions : Active absorption of water.

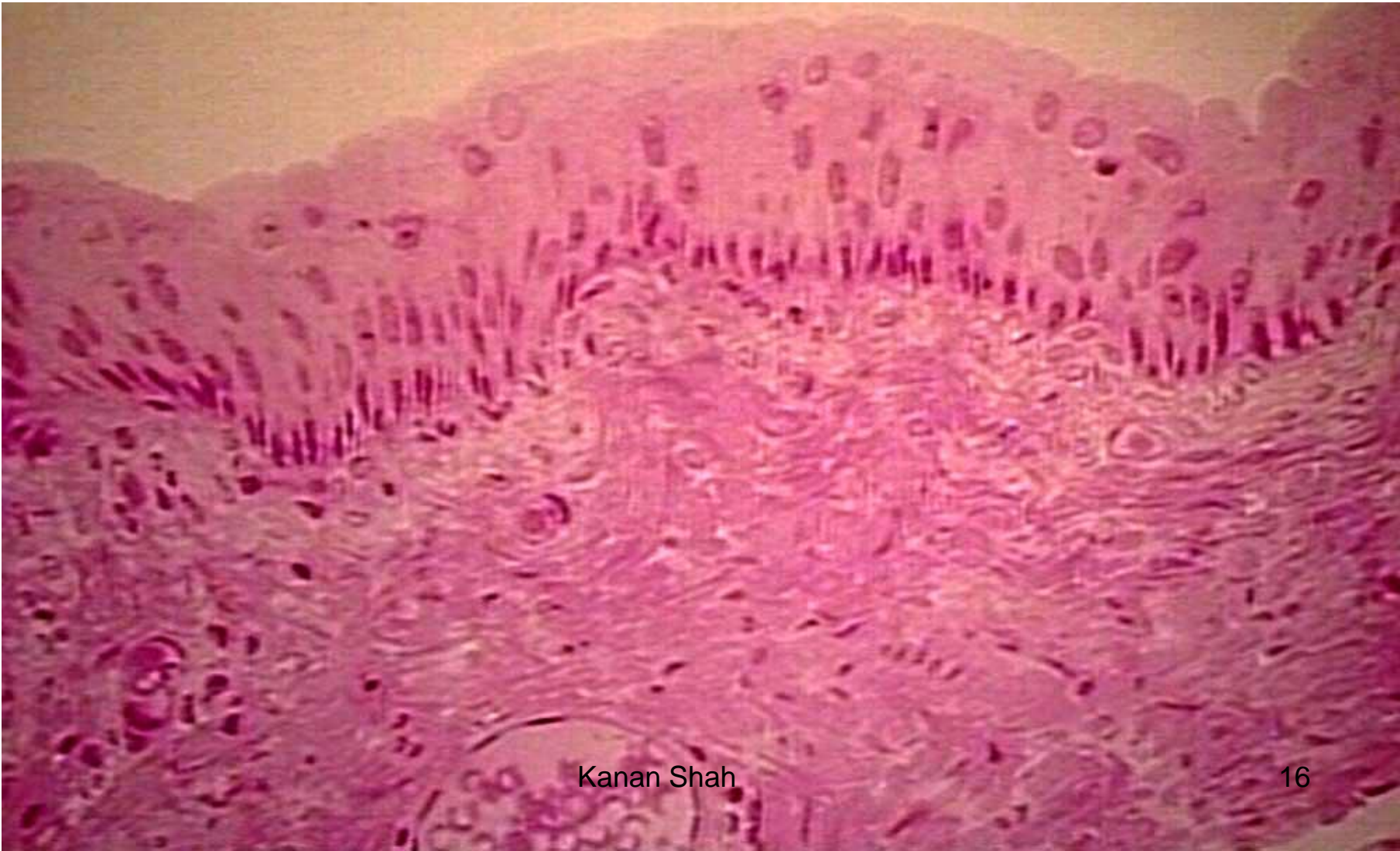
URETERS

- THREE COATS :
- OUTER FIBROUS -elastic fibers in loose connective tissue , blood vessels, nerves , lymphatics and fat cells
- MIDDLE MUSCULAR - In upper two thirds muscles arranged in two layers outer circular and inner longitudinal , In lower one third in three layers outer longitudinal middle circular and inner longitudinal
- INNER MCOUS MEMBRANE – Transitional epithelium . Thrown into six longitudinal folds when ureter is empty.



Urinary bladder

- Four coats - serous , muscular , submucous , mucous.

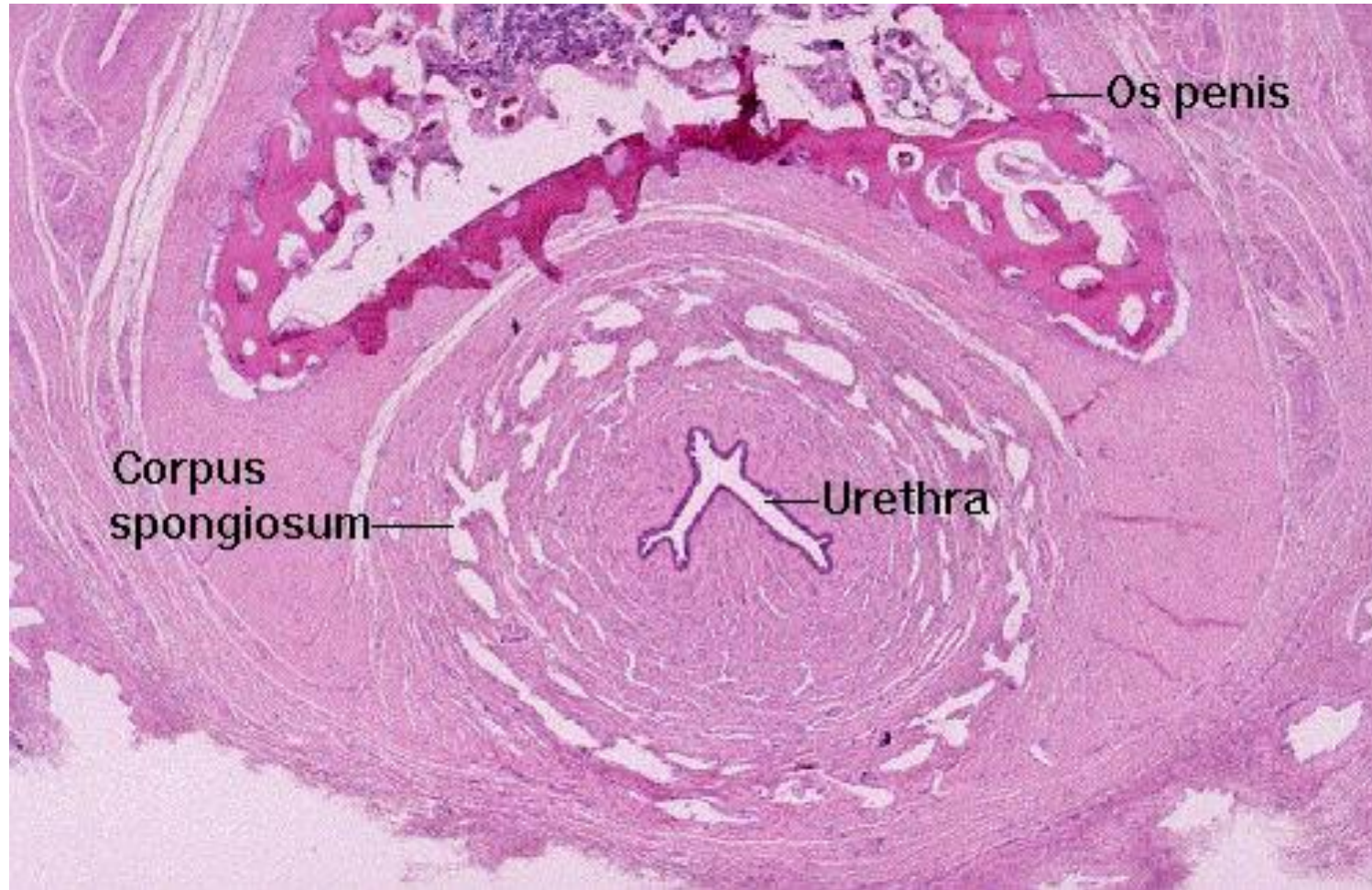


URETHRA

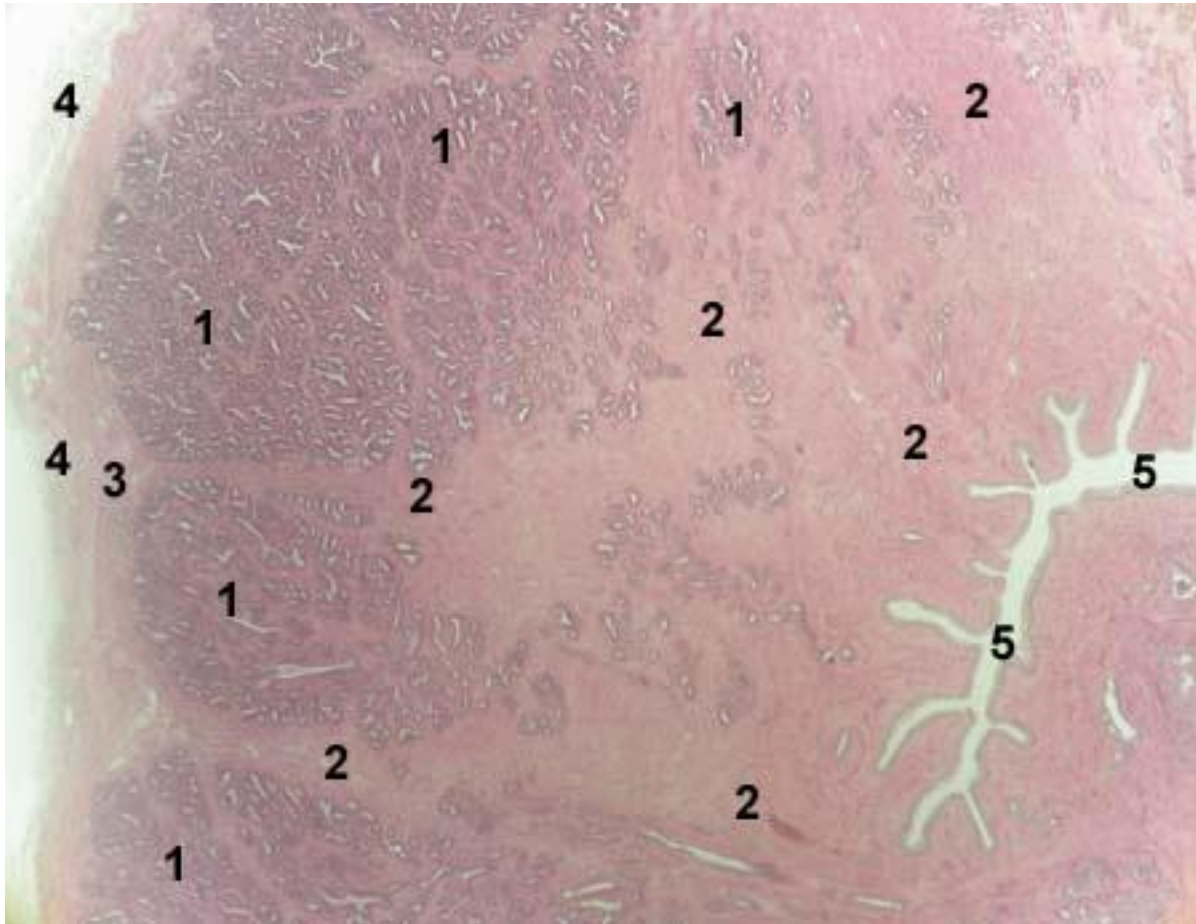
- THREE COATS : muscular , submucous , mucous



PENILE URETHRA



PROSTATIC URETHRA



Aknowledgement

- Inderbir Singh's Textbook of Human Histology
- Textbook of Histology- Atlas and Practical Guide by JP Gunasegaran
- Difiore's Atlas of Histology
- Images from Google
- Histology Text & Atlas -Brijeshkumar