Urinary System

What is an archinephros?

Hypothetical "kidney"– Believed to be the prototype from a segmented ancestor

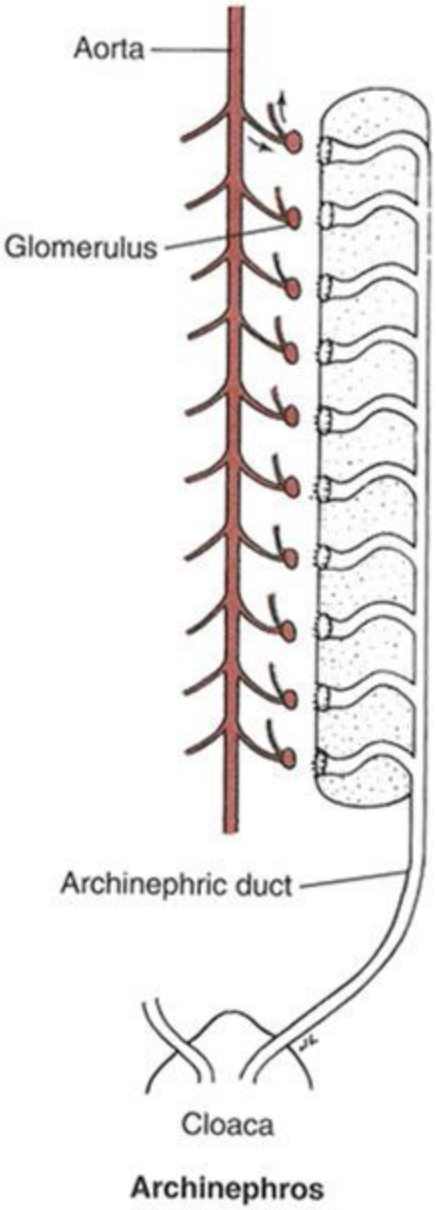
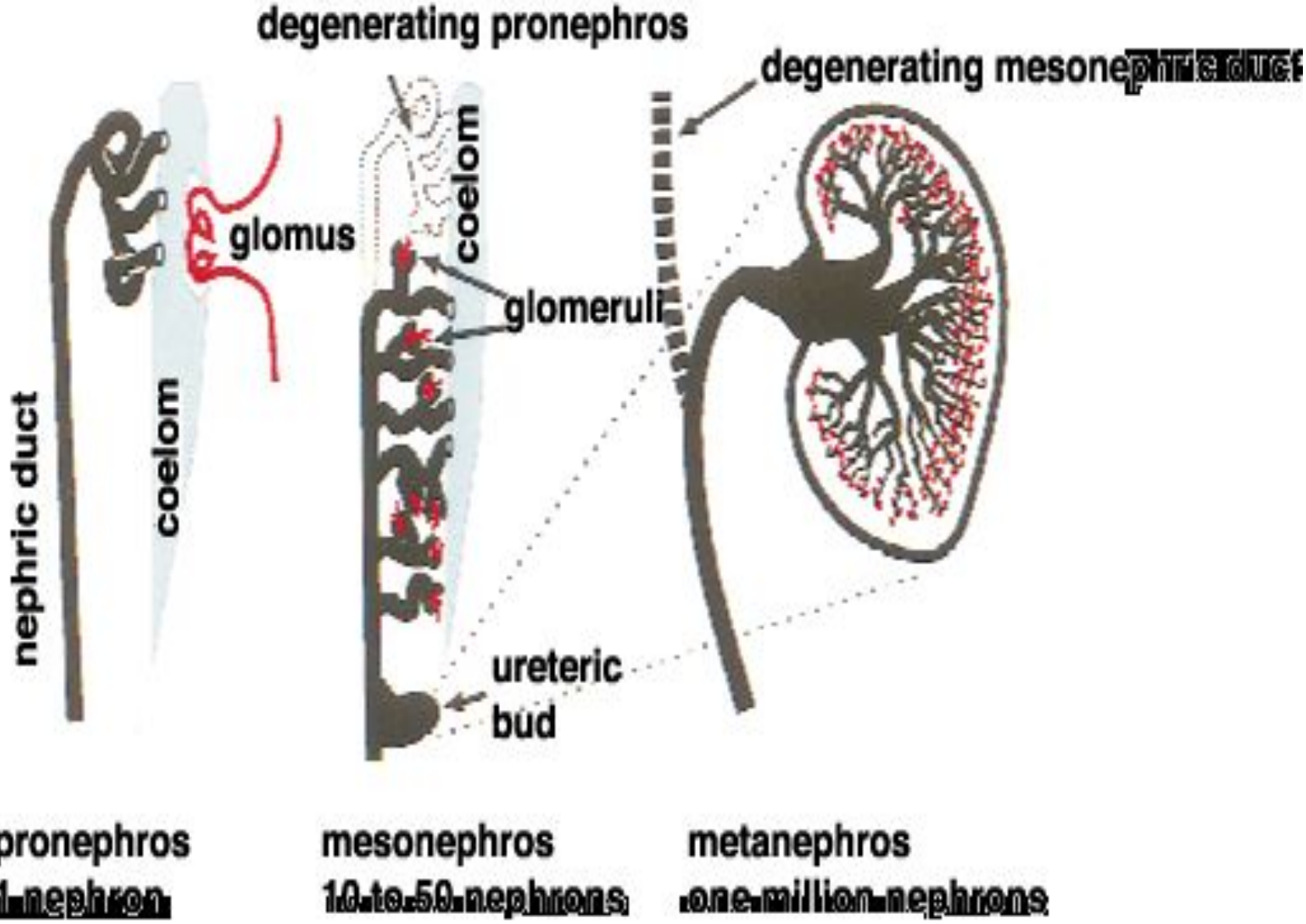


FIGURE 15.7
Hypothetical archinephros with one external glomerulus, nephrostome, and tubule per body segment. See also figure


degenerating pronephros
degenerating mesonephric duct
glomus
coelom
coelom
glomeruli
nephric duct
ureteric
bud
pronephros
1 nephron
mesonephros
10 to 50 nephrons
metanephros
one million nephrons

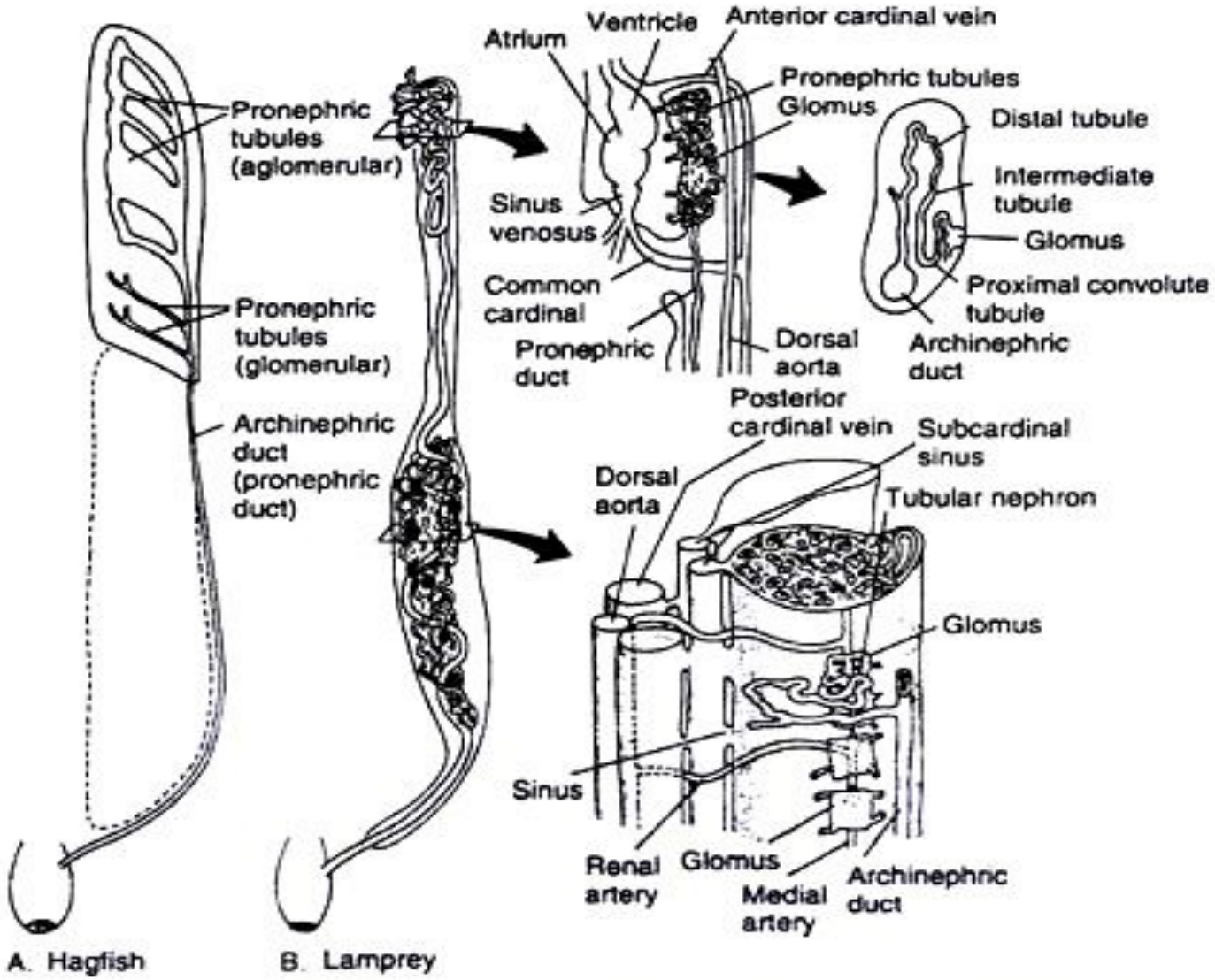


Fig. 2.50 : Cyclostome kidneys. A. In hagfish the adult kidney includes aglomerular anterior tubules and a few posterior glomerular tubules. B. In lamprey the adult kidney includes a posterior opisthonephros. In some species, a few anterior pronephric tubules with peritoneal funnels may persist. Several pronephric tubules share a glomus, and each can be composed of proximal, intermediate, and distal sections

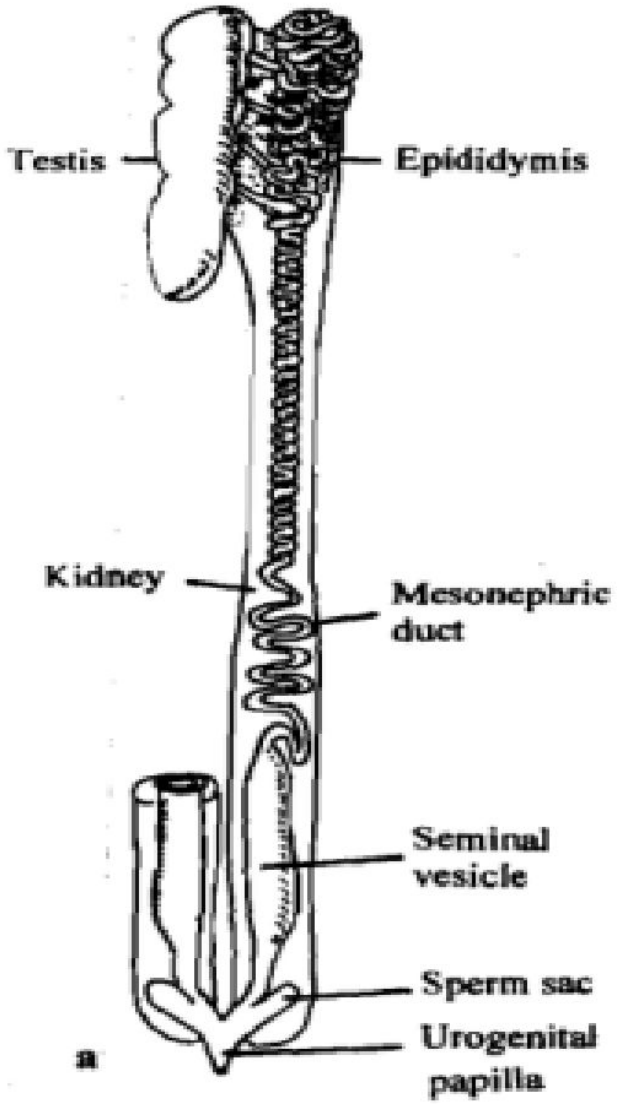
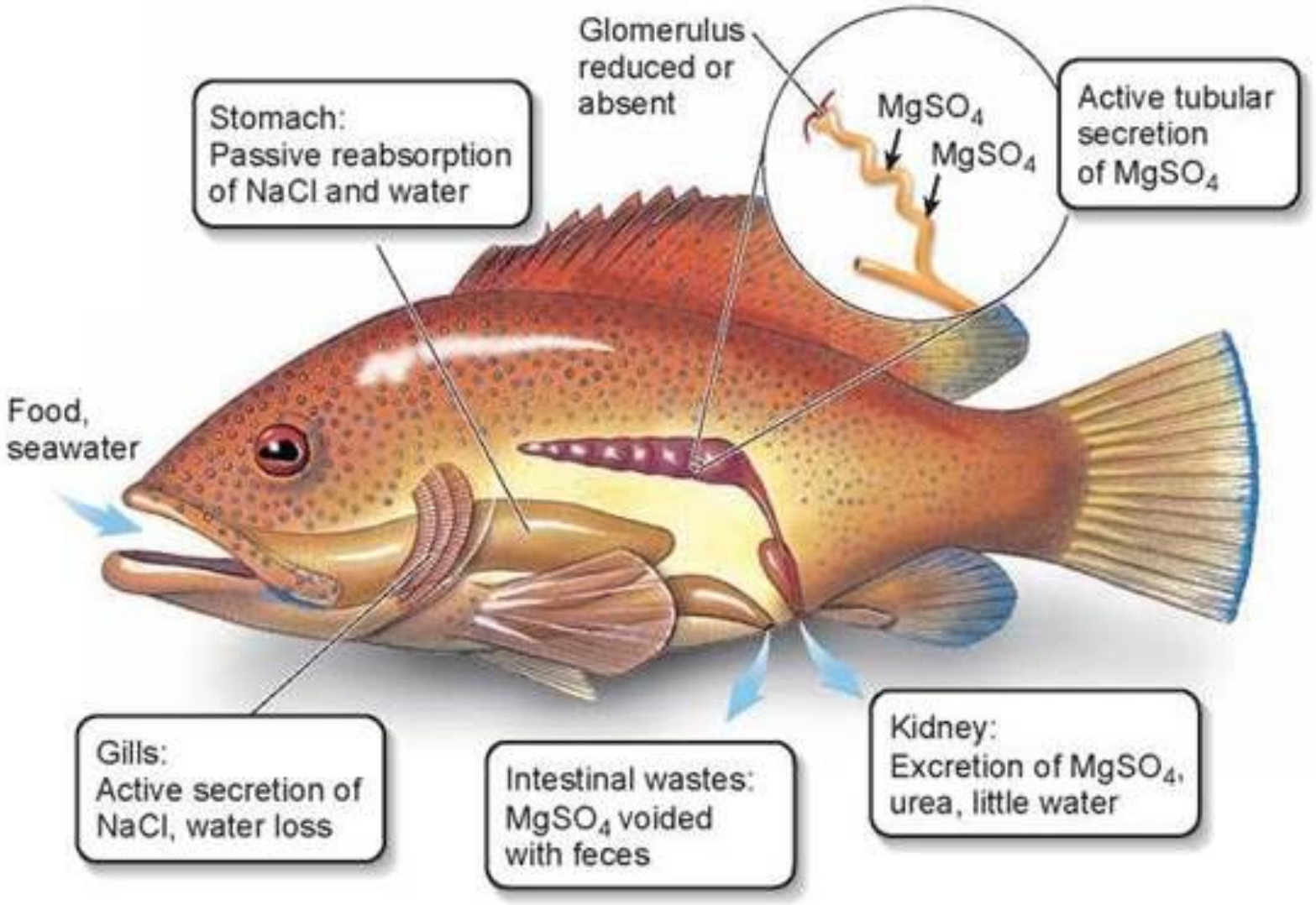


Fig. 9.27: Reproductive system of cartilaginous fishes (a) reproductive system of shark *Squalus*. The left


Glomerulus reduced or absent
Stomach: Passive reabsorption of NaCl and water
$MgSO_4$
$MgSO_4$
Active tubular secretion of $MgSO_4$
Food, seawater
Gills: Active secretion of NaCl, water loss
Intestinal wastes: $MgSO_4$ voided with feces
Kidney: Excretion of $MgSO_4$, urea, little water

Marine fish

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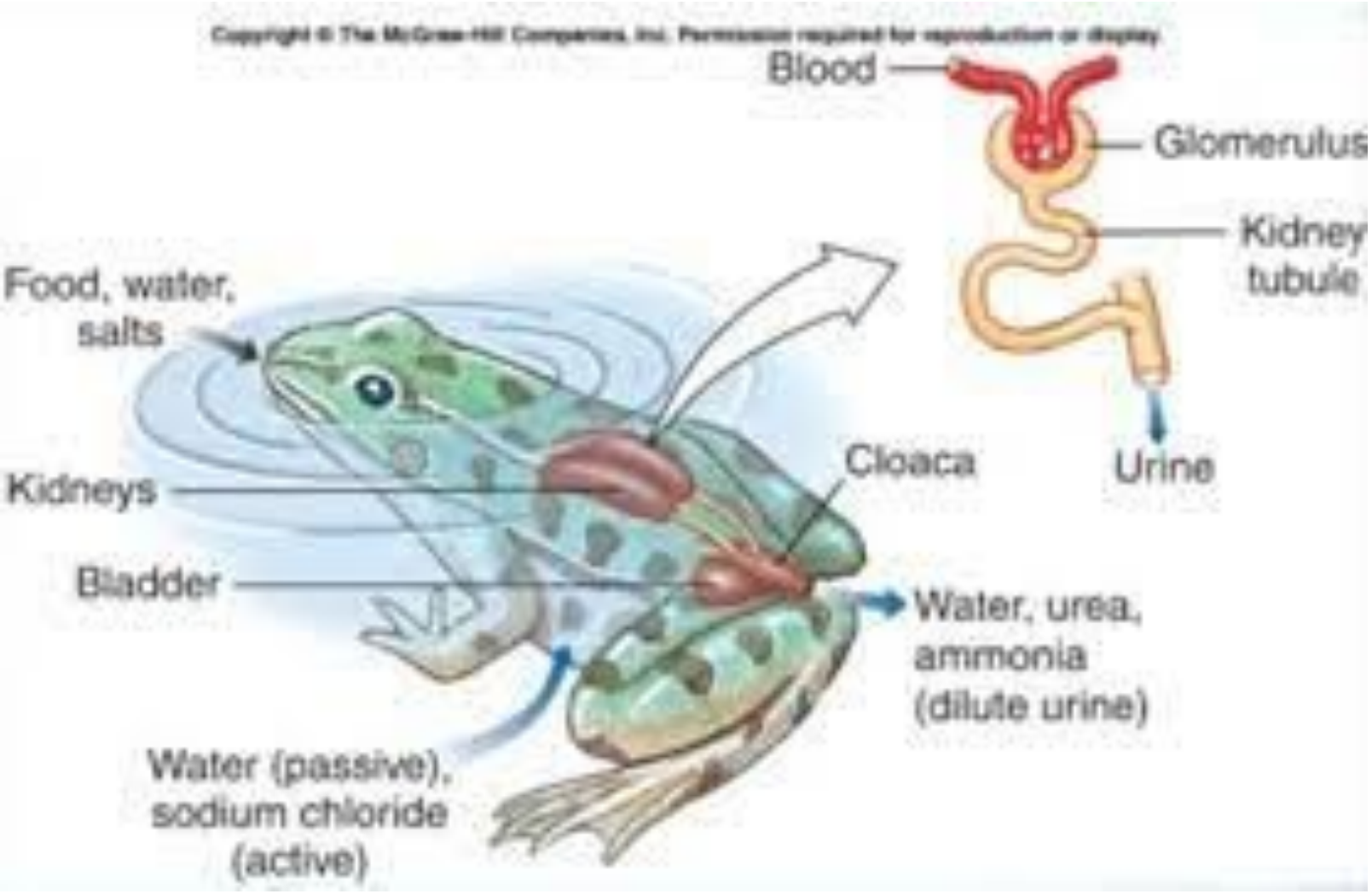
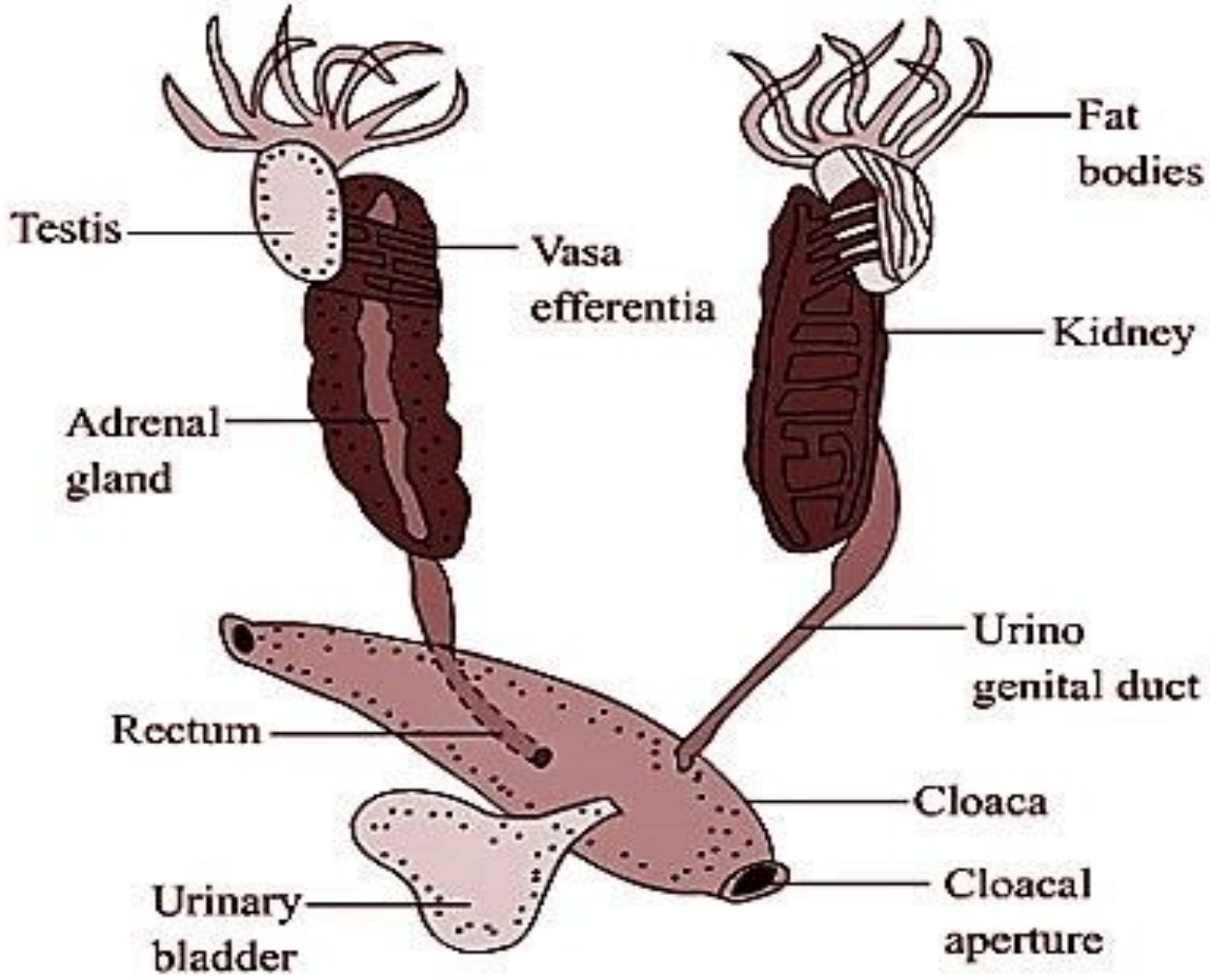



Fat bodies
Testis
Vasa efferentia
Kidney
Adrenal gland
Urino genital duct
Rectum
Cloaca
Cloacal aperture
Urinary bladder

الجهاز البولي التناسلي في السحالي

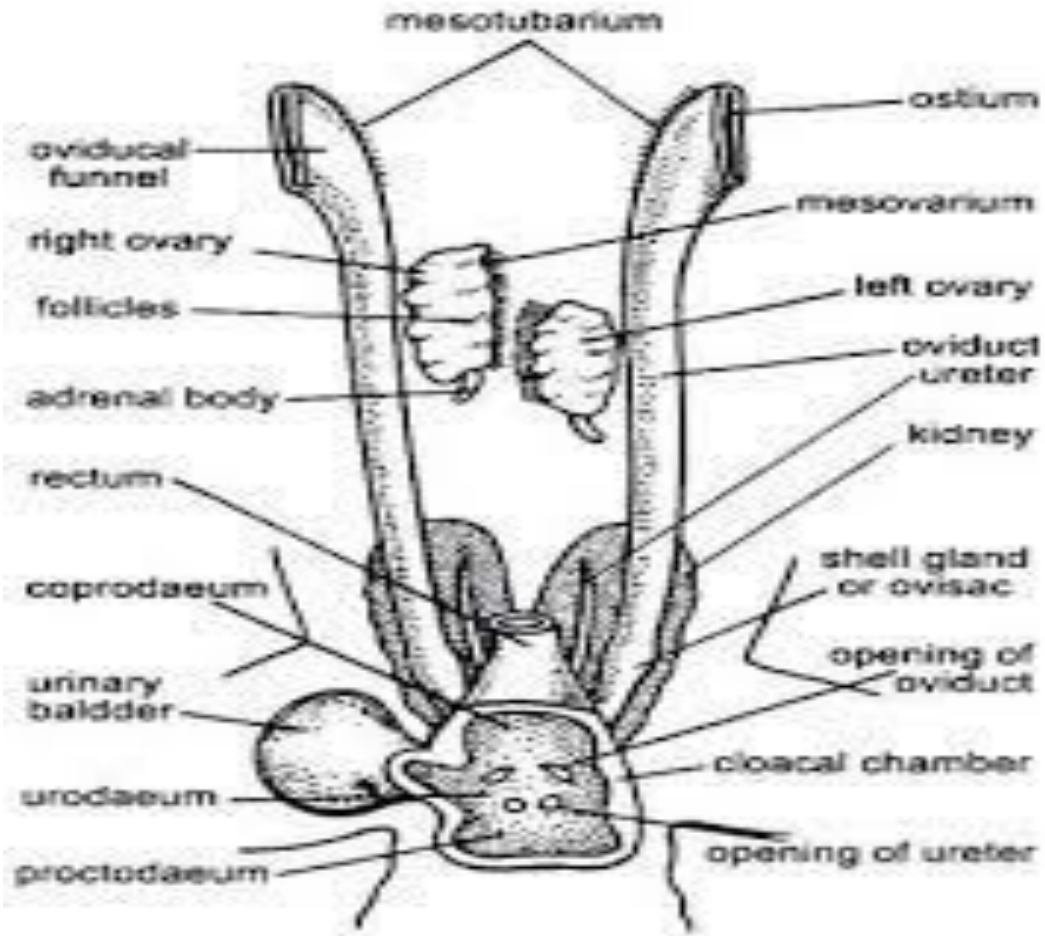
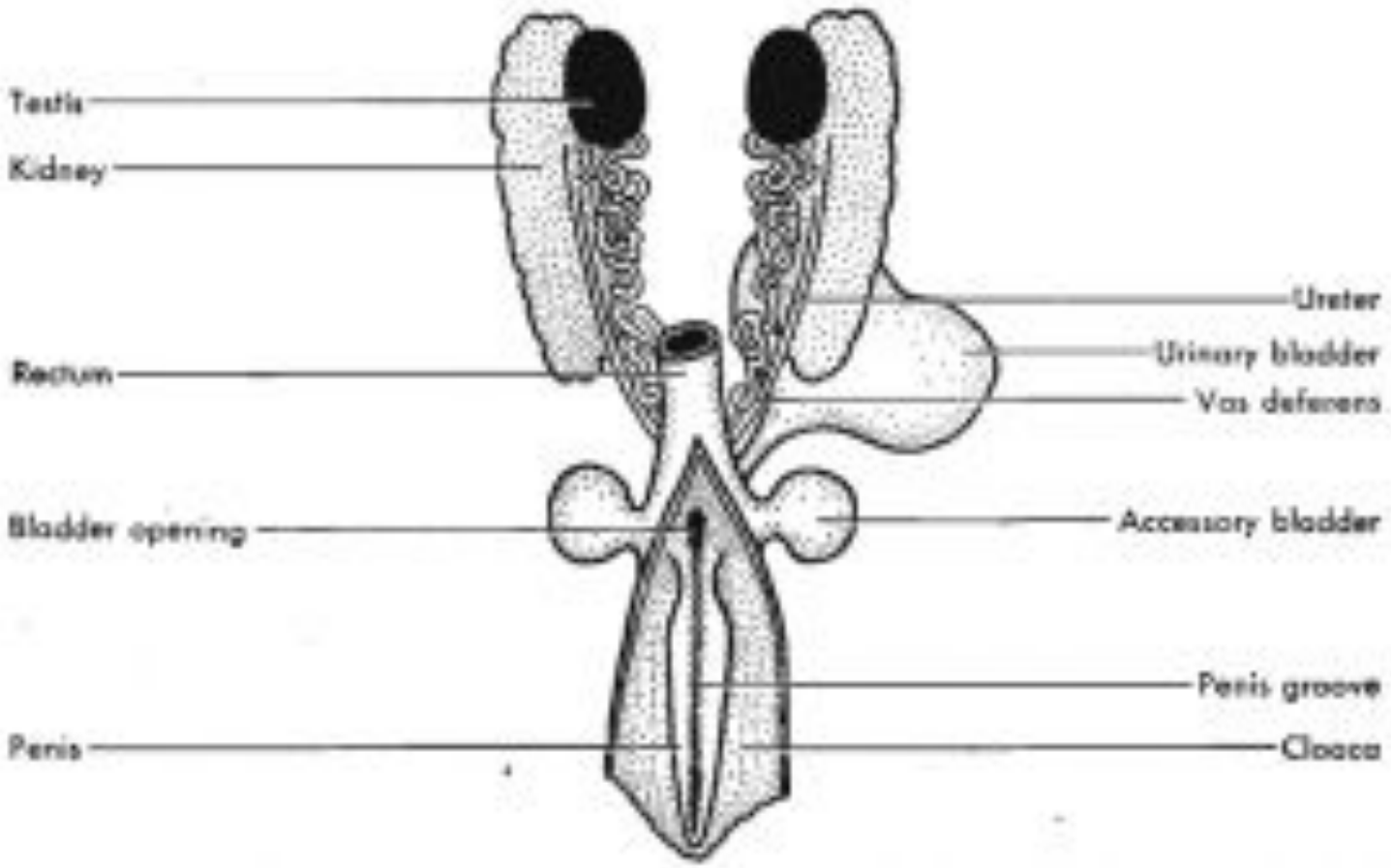


Fig. 21.37. *Uromastix*. Female urinogenital system.

الجهاز البولي التناسلي في السلاحف



الجهاز البولي التناسلي في الطيور

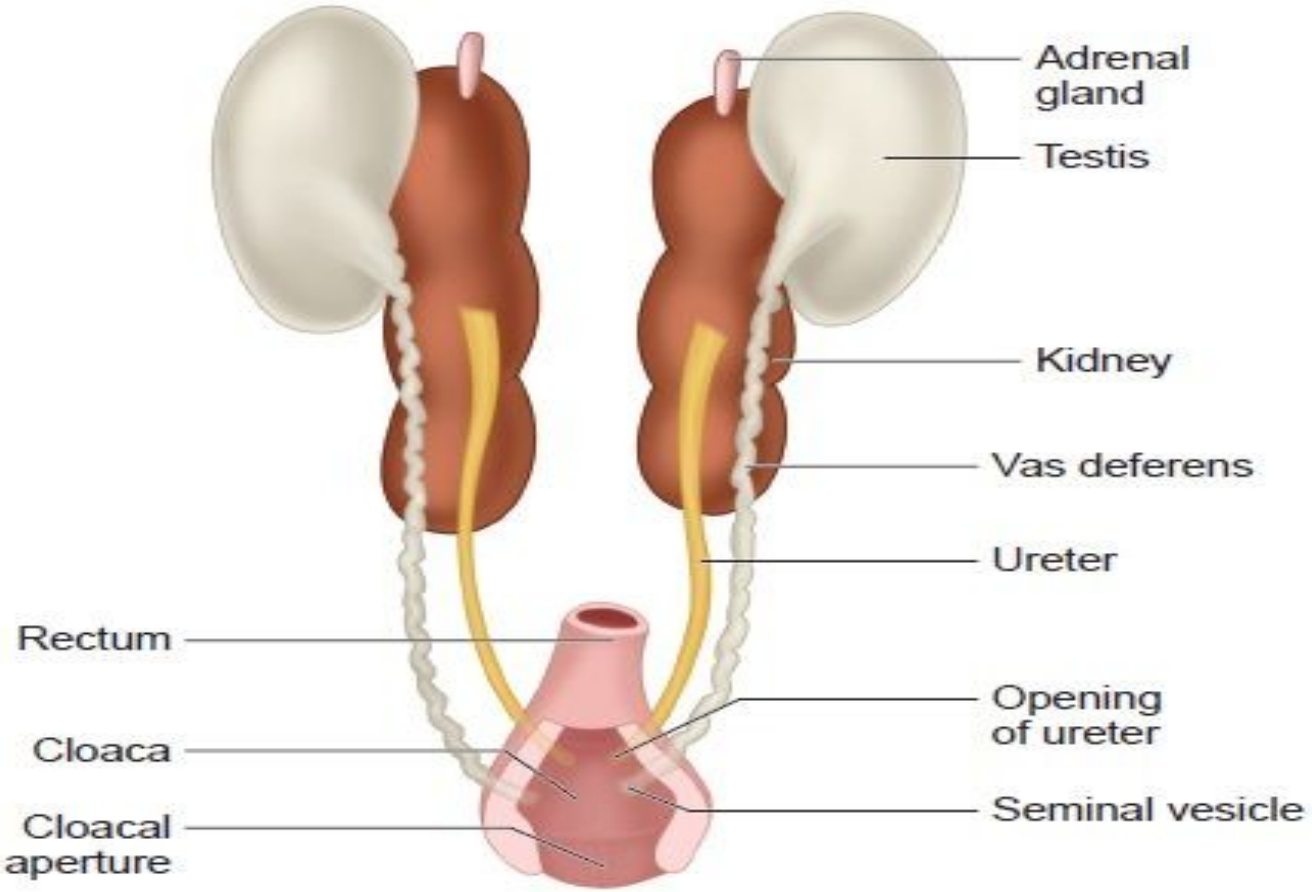
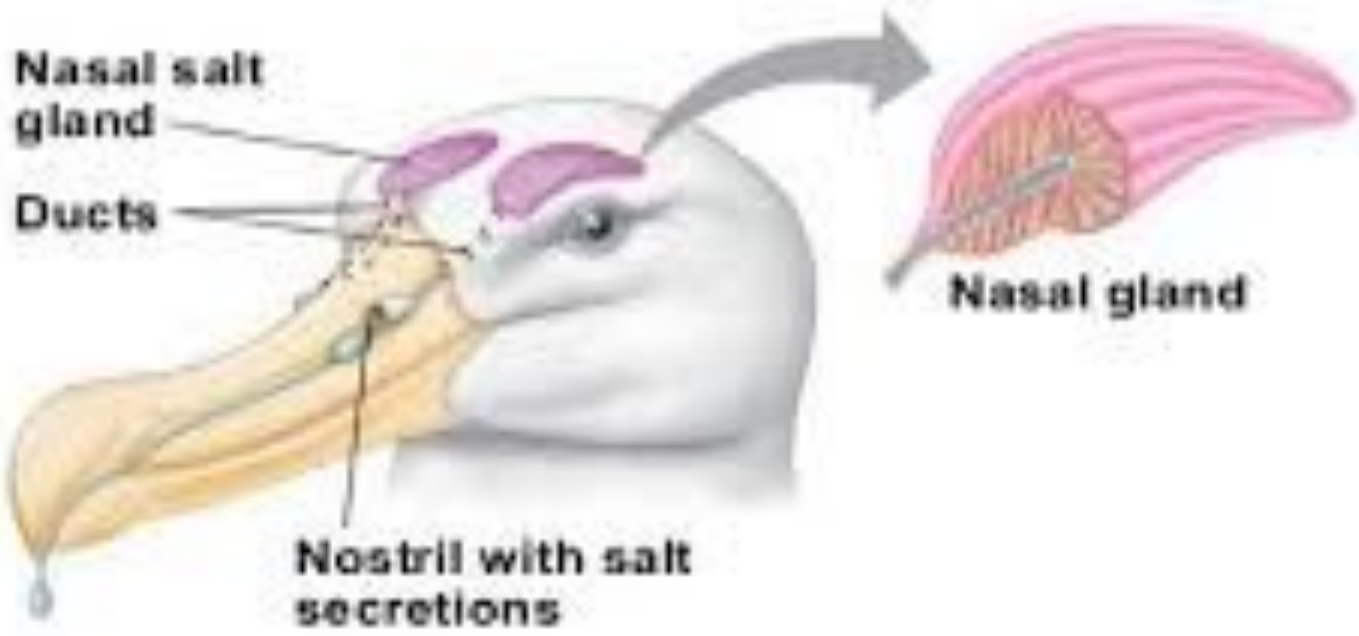
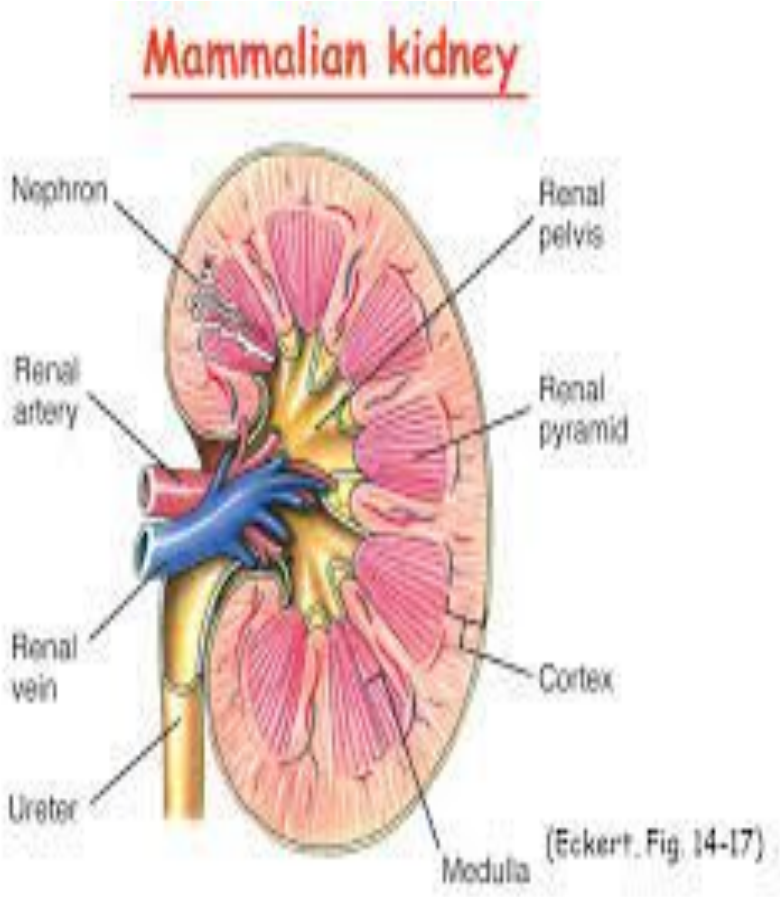


Figure 4.36 Pigeon –Male Urinogenital System



(a) Location of nasal glands in a marine bird

الجهاز البولي في اللبائن



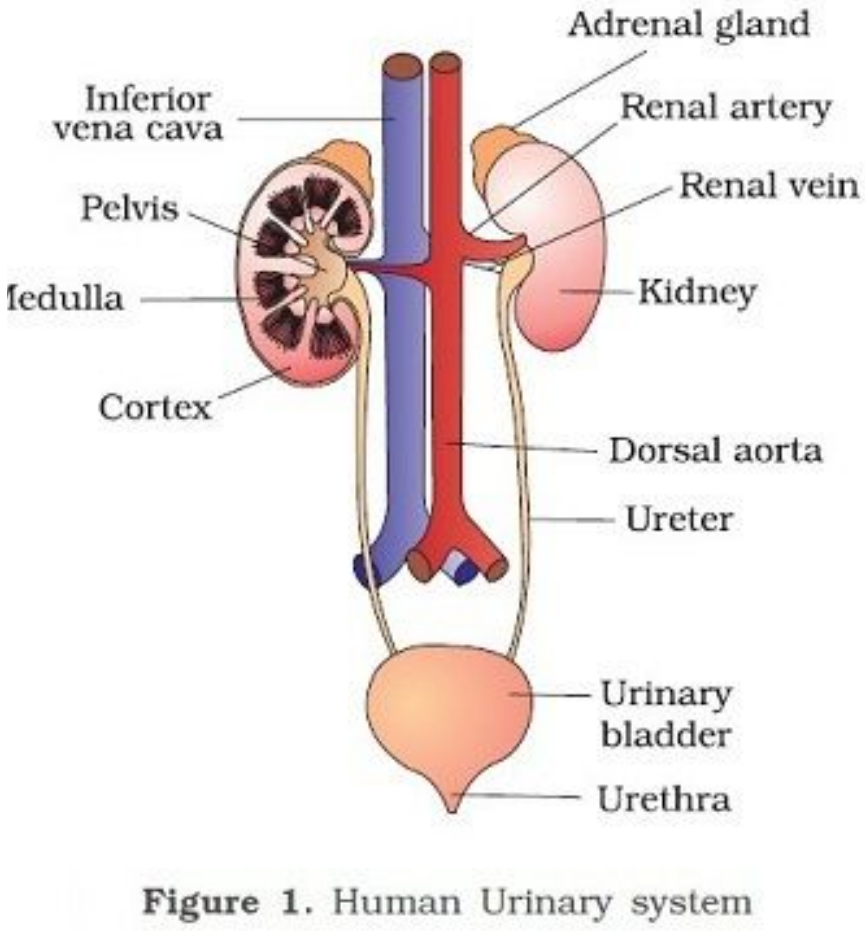
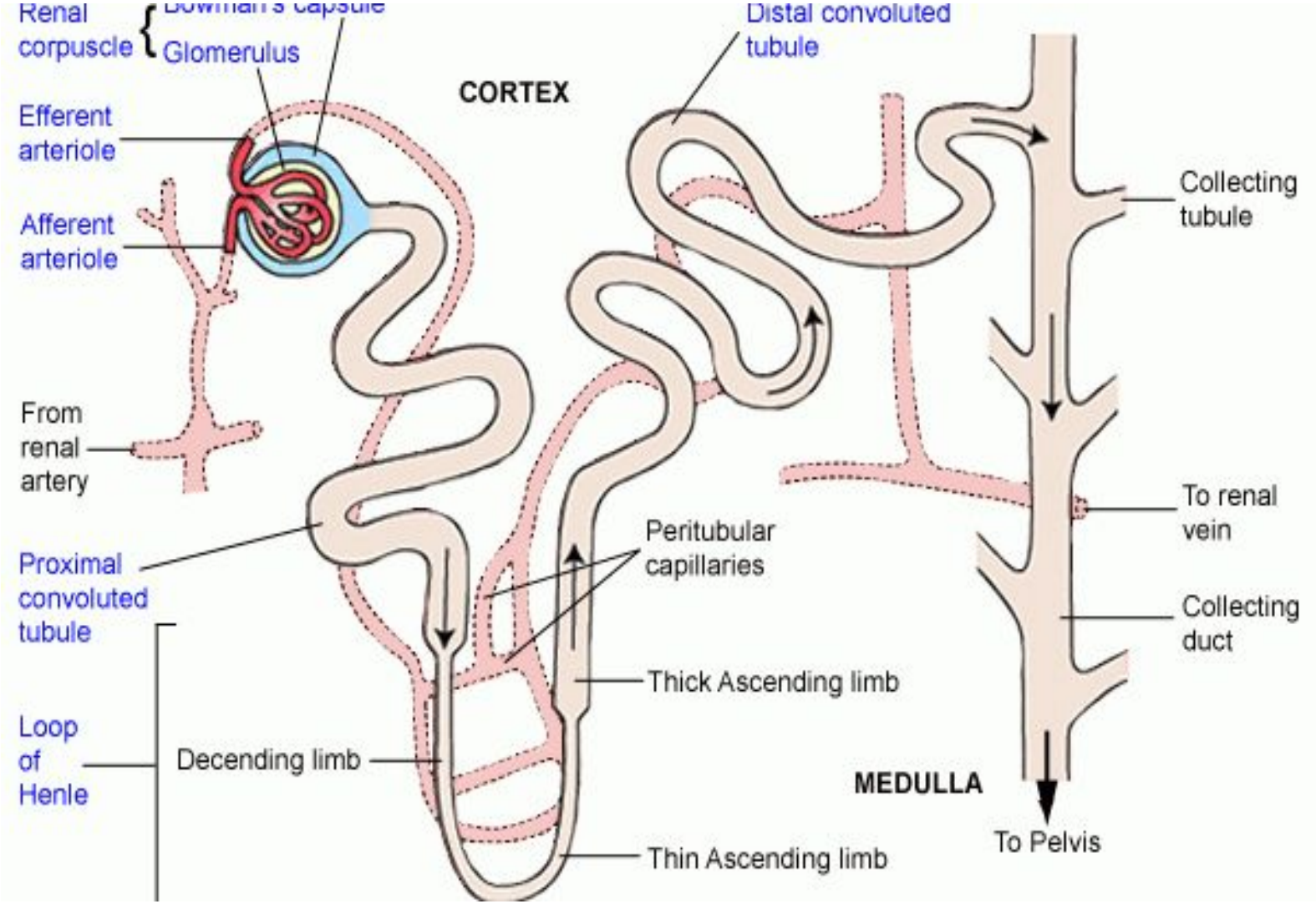


Figure 1. Human Urinary system


Renal corpuscle
Bowman's capsule
Glomerulus
Efferent arteriole
Afferent arteriole
From renal artery
Proximal convoluted tubule
Loop of Henle
Decending limb
CORTEX
Distal convoluted tubule
Collecting tubule
To renal vein
Collecting duct
Peritubular capillaries
Thick Ascending limb
Thin Ascending limb
MEDULLA
To Pelvis