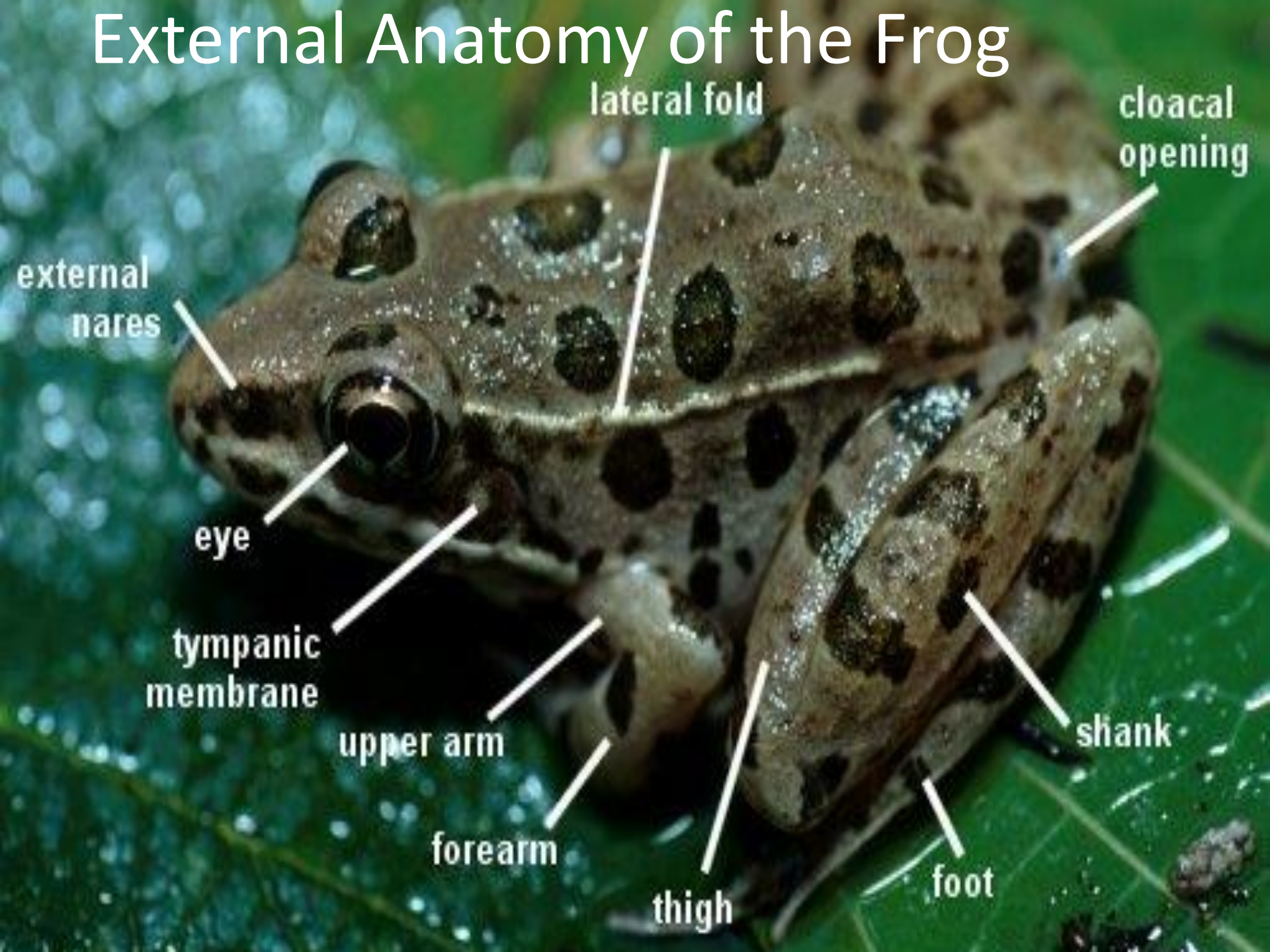
Leopard Frog

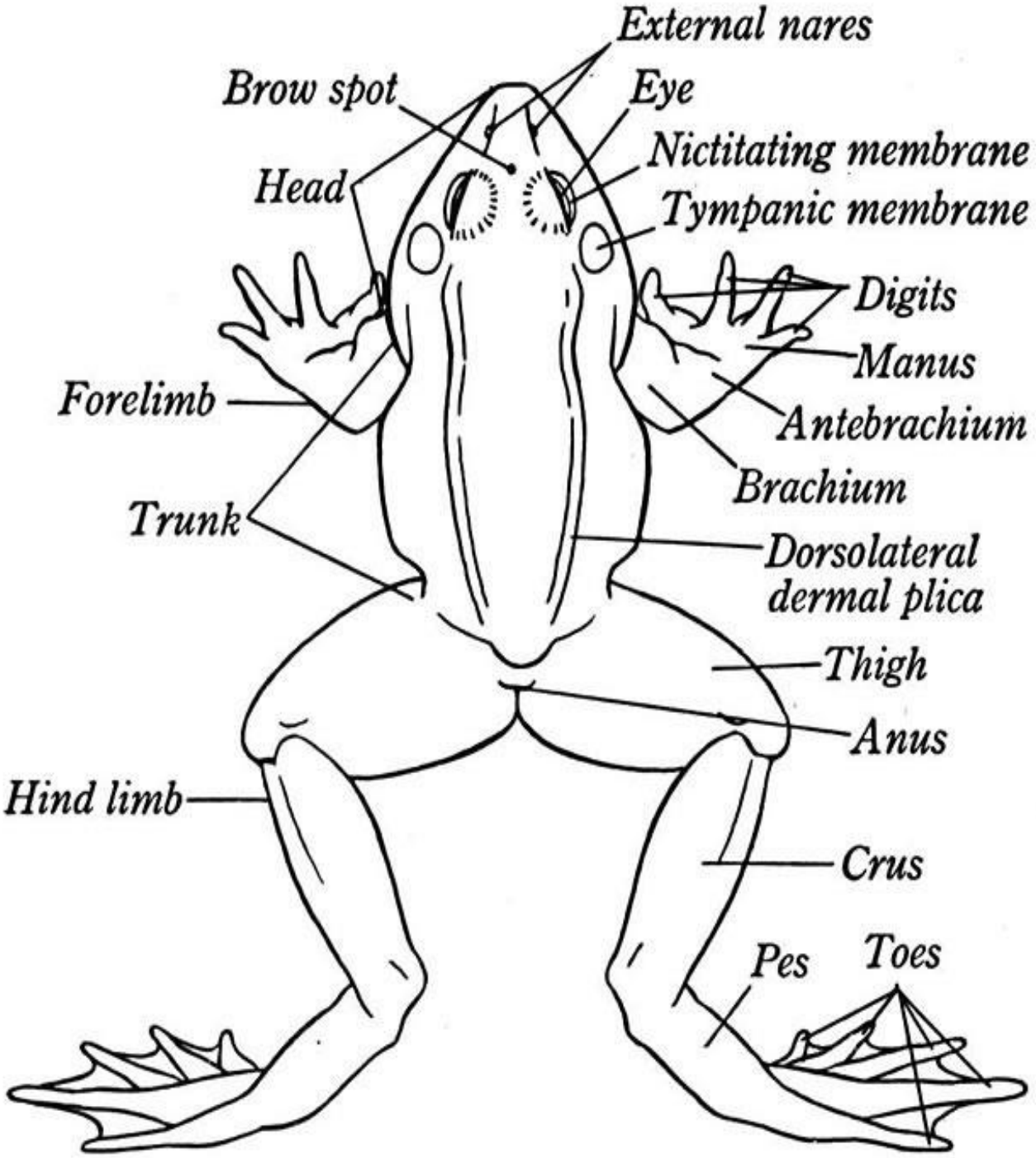
- **Classification**
  - Domain - **Eukarya**
    Kingdom - **Animalia**
    Phylum - **Chordata**
    Subphylum - **Verebrata**
    Superclass – Skip This
    Class - **Amphibia**
    Order - **Anura**
    Family - **Ranidae**
    Genus - ***Rana***
    Species - ***Rana pipiens***
- Scientific Name - ***Rana pipiens***

Frog Body Parts and Functions

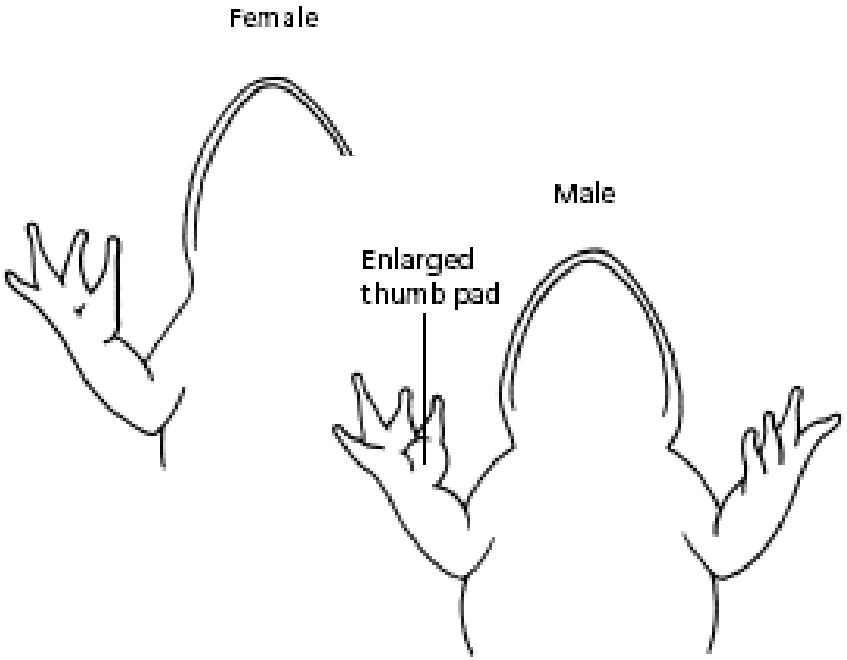
External Anatomy of the Frog

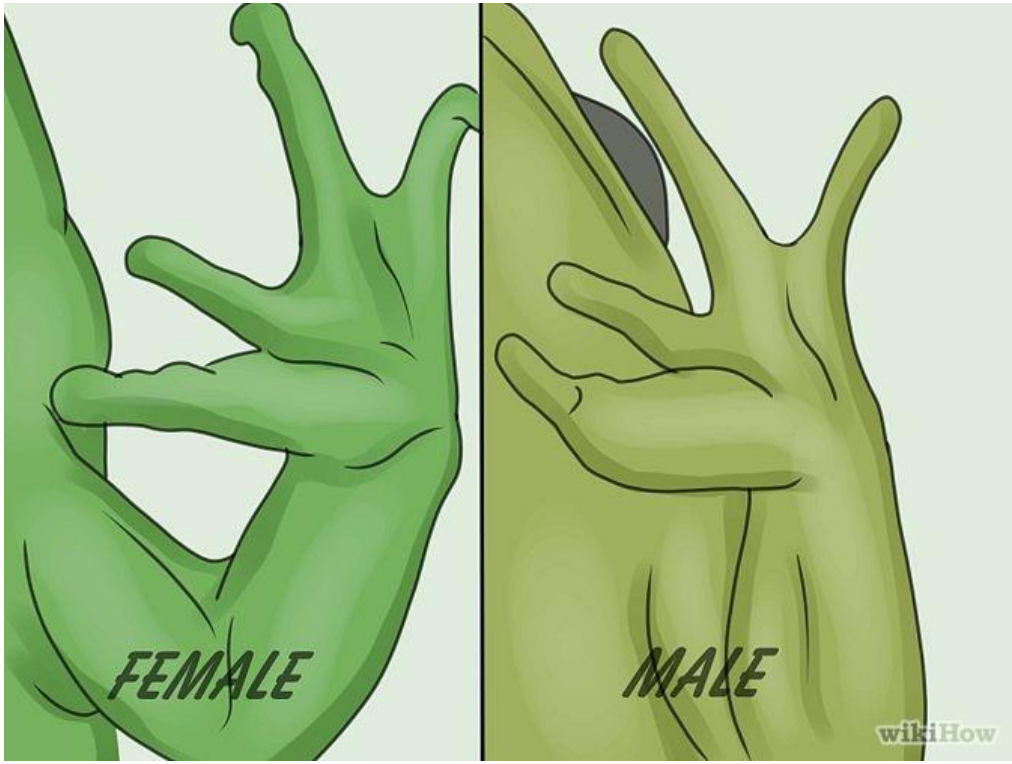


External Anatomy of the Frog



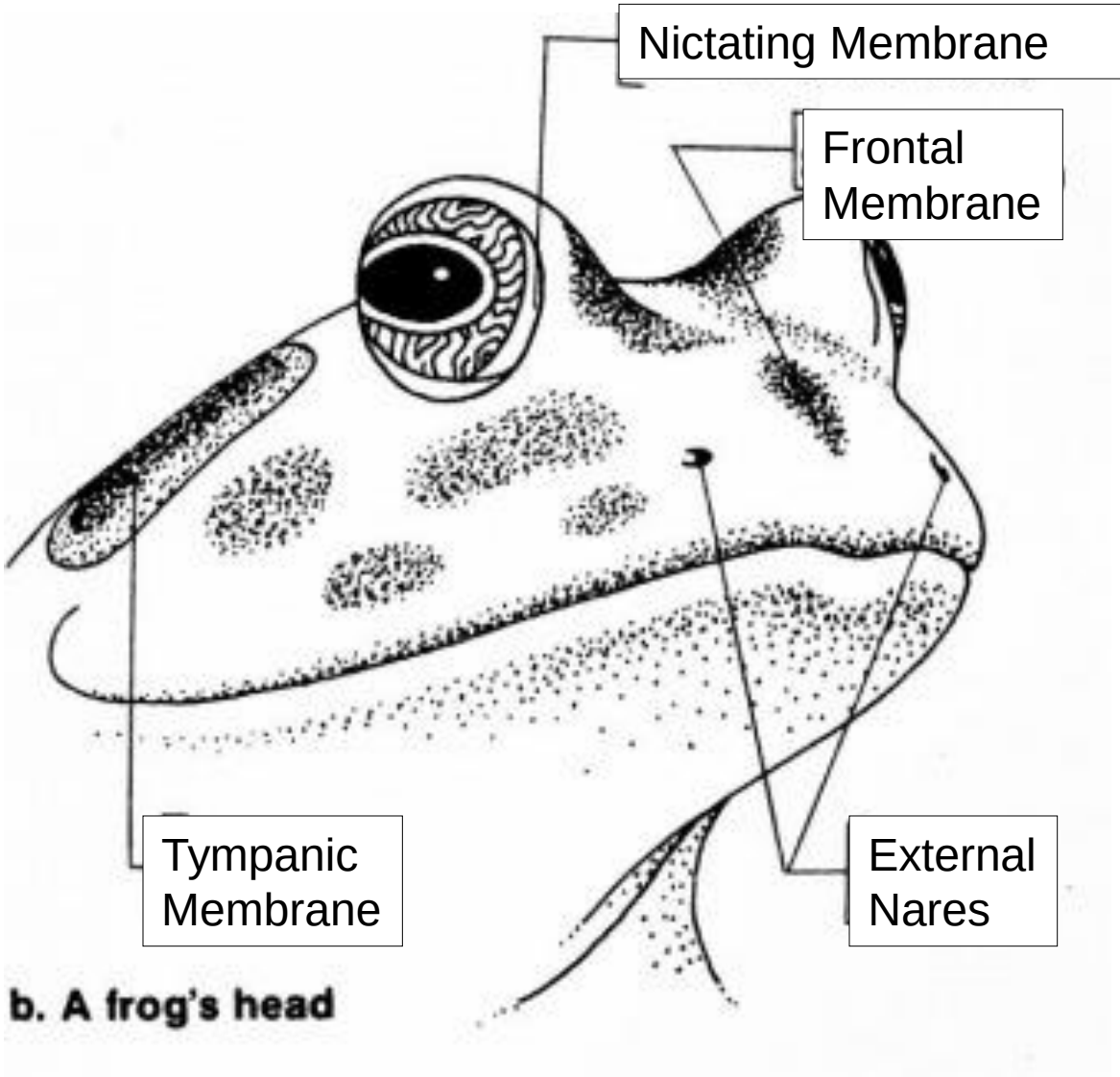
Determine if your frog is a Male or Female



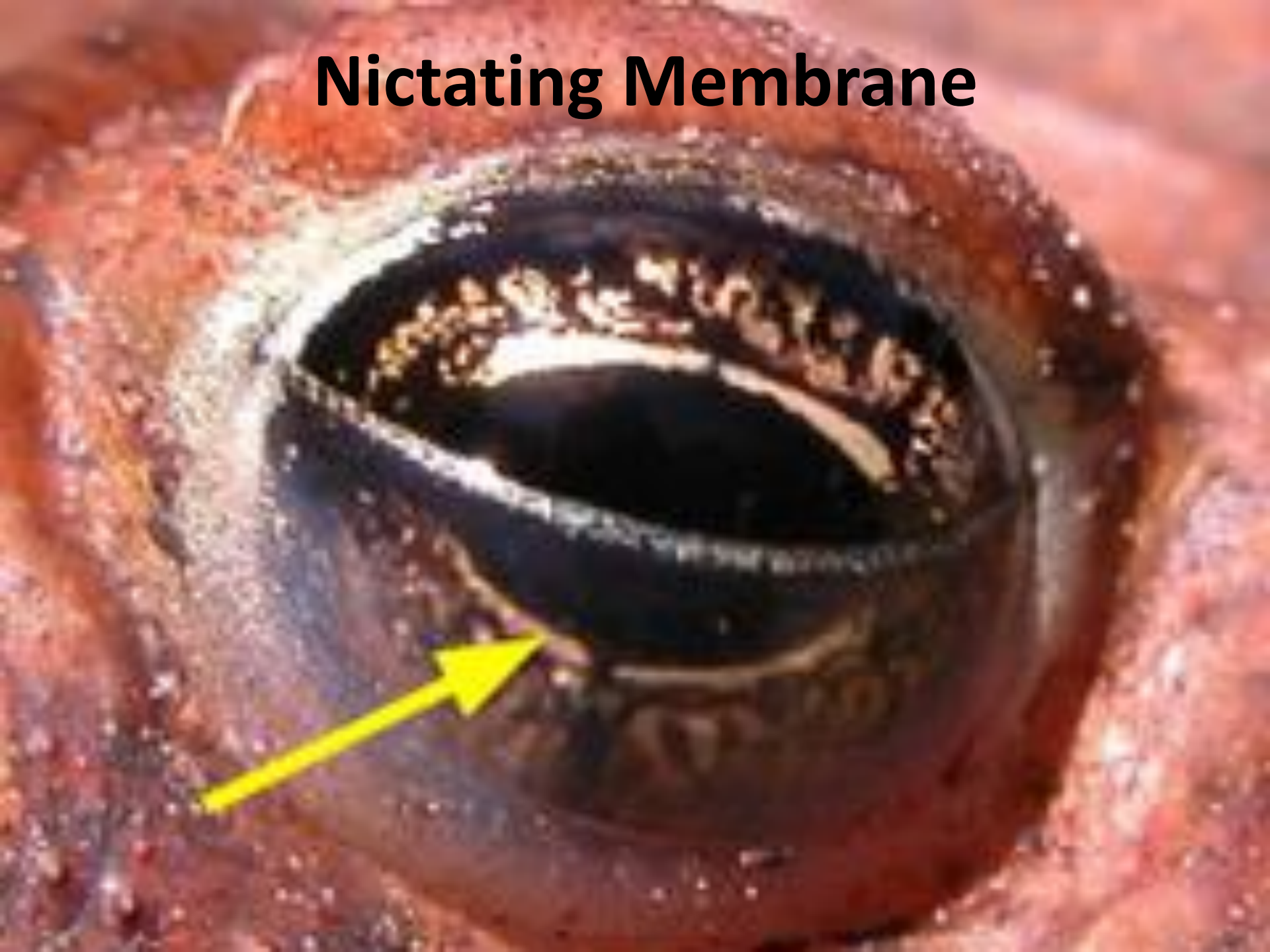


The sex of a frog may be determined externally by examining the **thumb pads** on the front feet. The thumb pads of males are enlarged at the base as in the drawing on the right.

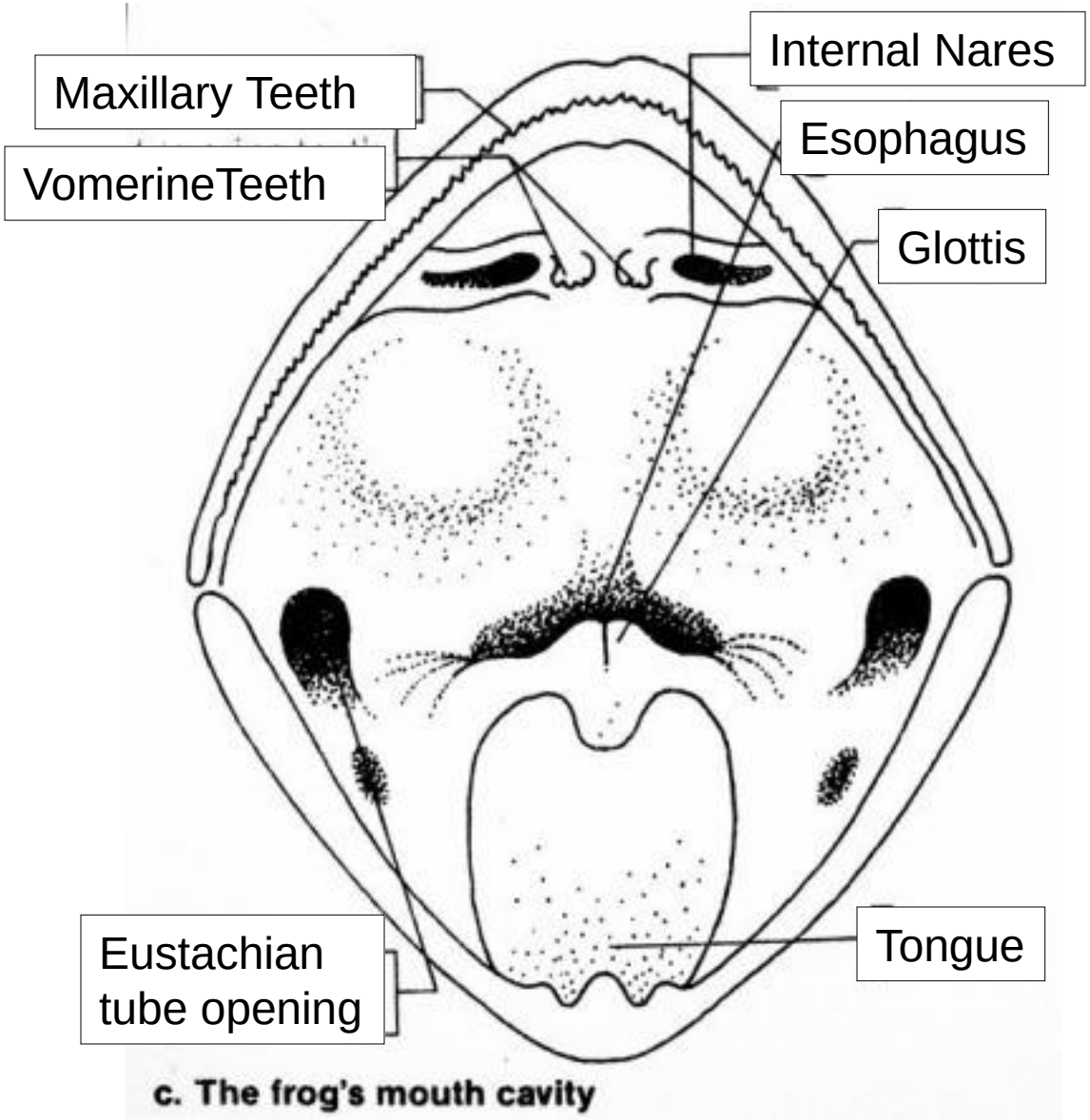
External Anatomy of the Frog's Head



Nictating Membrane



Internal Anatomy of the Frog's Head



Functions of the body parts that make up the frog's head

- **External nares or nostrils -** Anterior openings for the entry or exit of air.
- **Esophagus -** Tube that connects the mouth and the stomach in a frog.
- **Tympanic Membrane -** The eardrum - receives sound waves
- **Glottis -** The opening from the mouth into the respiratory system

Functions of the body parts that make up the frog's head

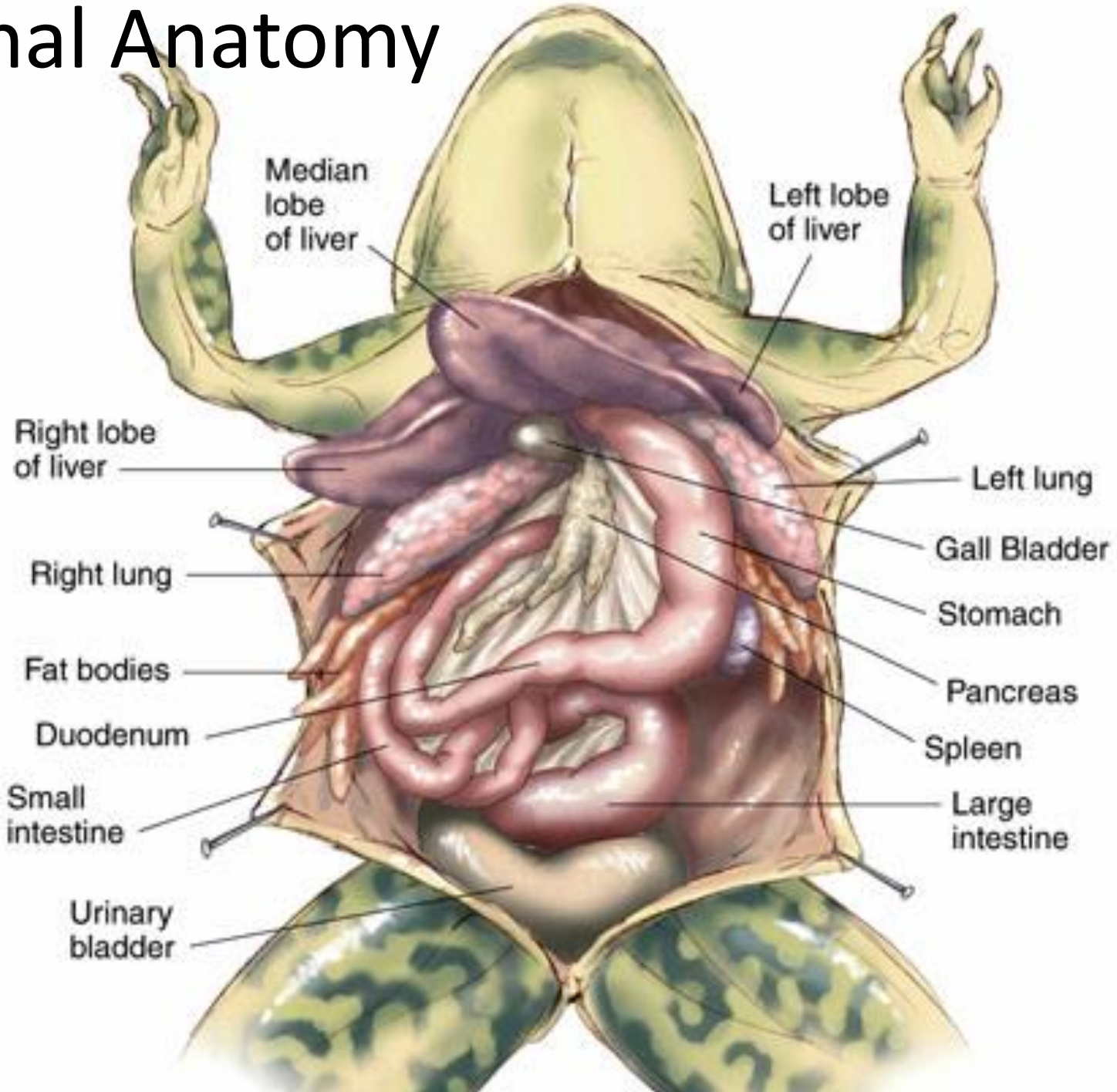
- **Tongue -** Muscular structure attached to the front of the mouth which is extended to catch insects (its food).
- **Maxillary Teeth -** Sharp teeth in the maxilla of a frogs mouth that function in holding captured prey.
- **Vomerine Teeth -** Small projections in the top of a frog's mouth that function in holding and captured prey.
- **Eustachian tube openings -** Openings in the mouth that lead to tubes that connect to the middle ear to equalize air pressure

Functions of the External Anatomy of the Frog

- **Nictitating Membrane -** A transparent part of a frog's lower eyelid that moves over the eye to clean it and protect it.
- **Cloacal Opening -** Opening of cloaca through which undigested food, urine, eggs, and sperm are passed.
- **Vocal Sacs** - The **vocal sac** is the flexible membrane of skin possessed by most male **frogs**.

  The **purpose** of the **vocal sac** is usually as an amplification of their mating or advertisement call.

Internal Anatomy



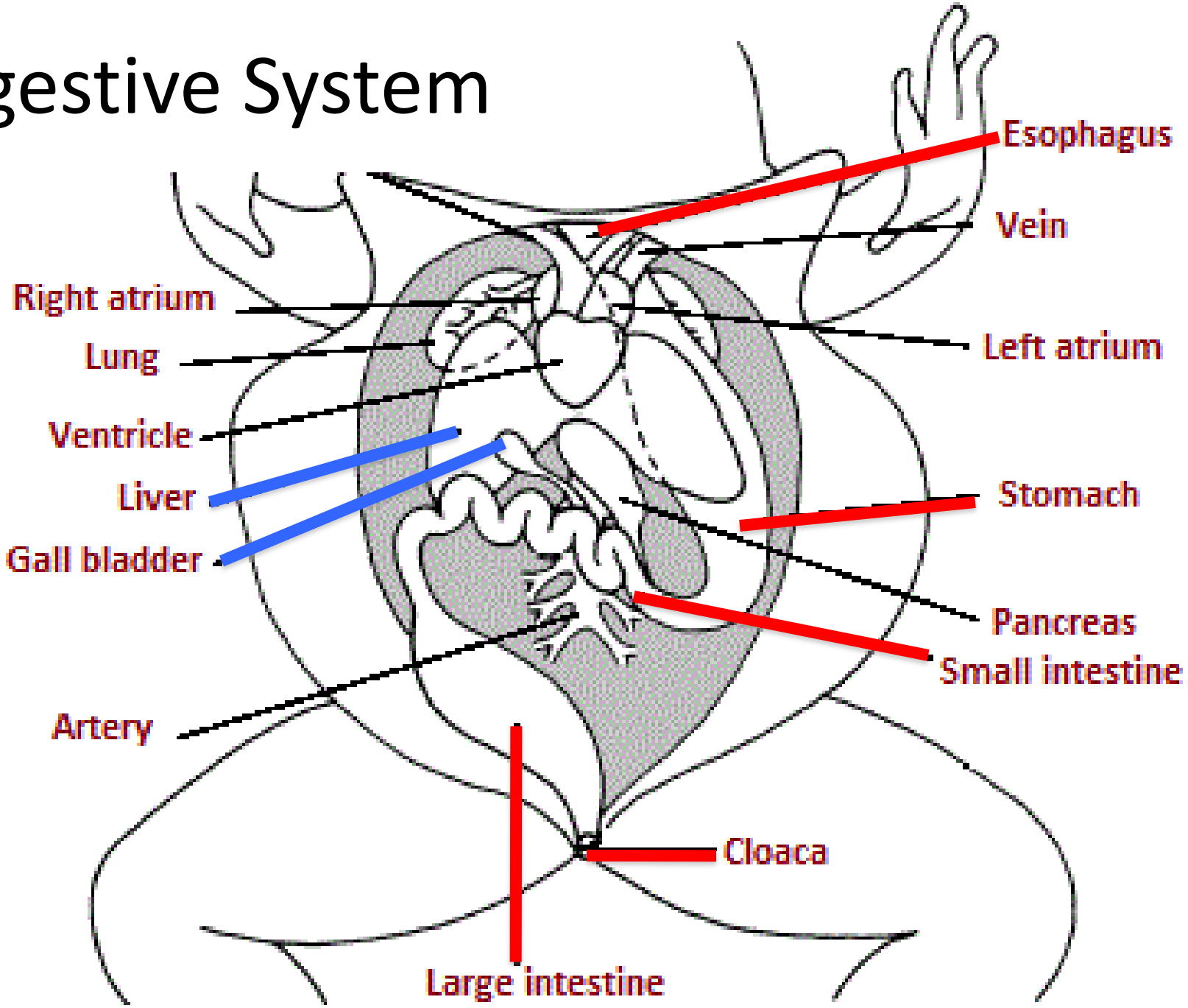
Functions of the Internal Anatomy of a Frog:

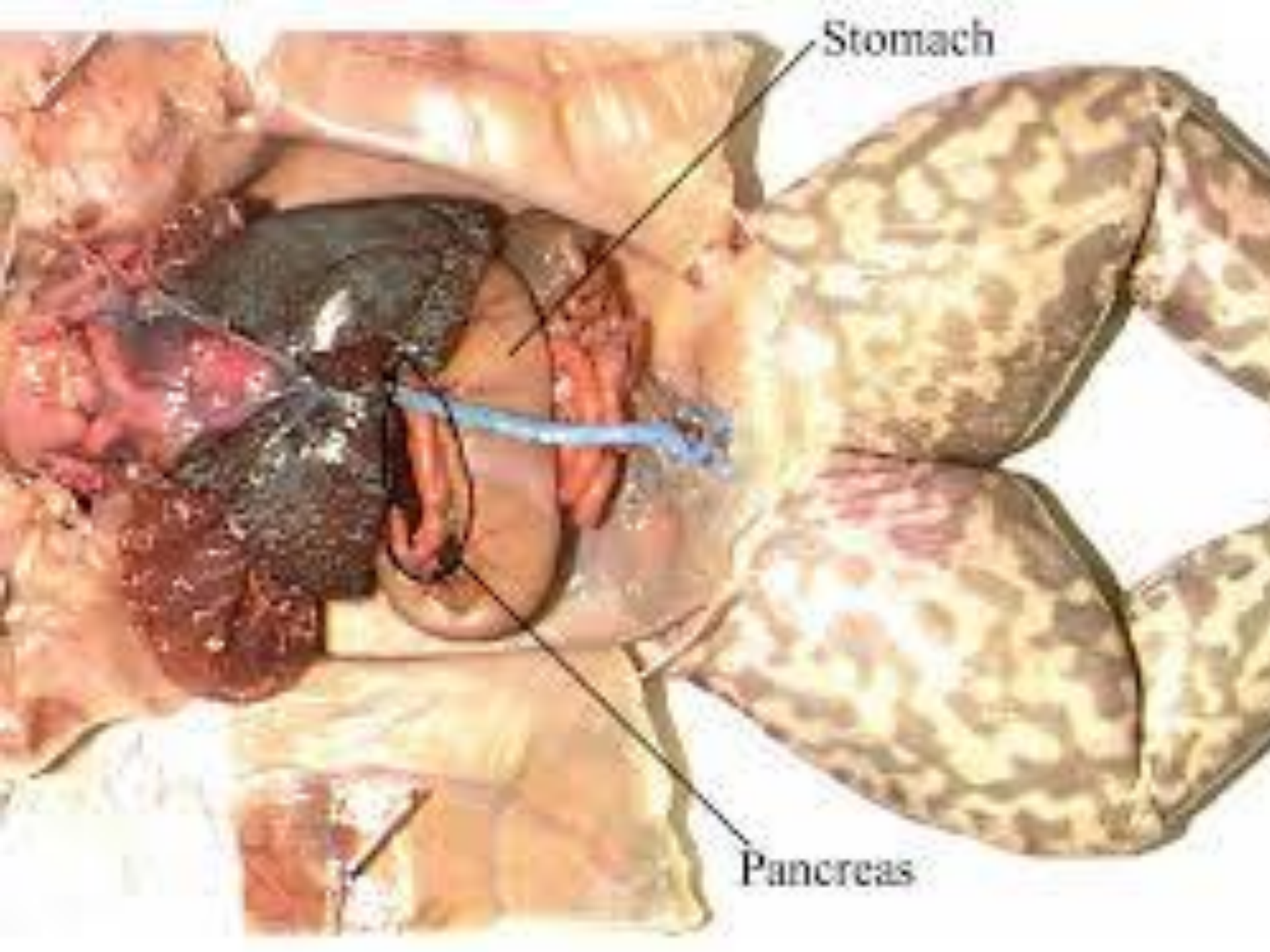
- **Stomach -** Stores food and mixes it with enzymes to begin digestion.
- **Small Intestine -** The principal organ of digestion and absorption of digested food.
- **Duodenum -** The anterior (front) part of the small intestine into which food passes from the stomach
- **Pancreas -** Gland which secretes digestive enzymes into the duodenum.
- **Gall Bladder -** Sac which stores bile.

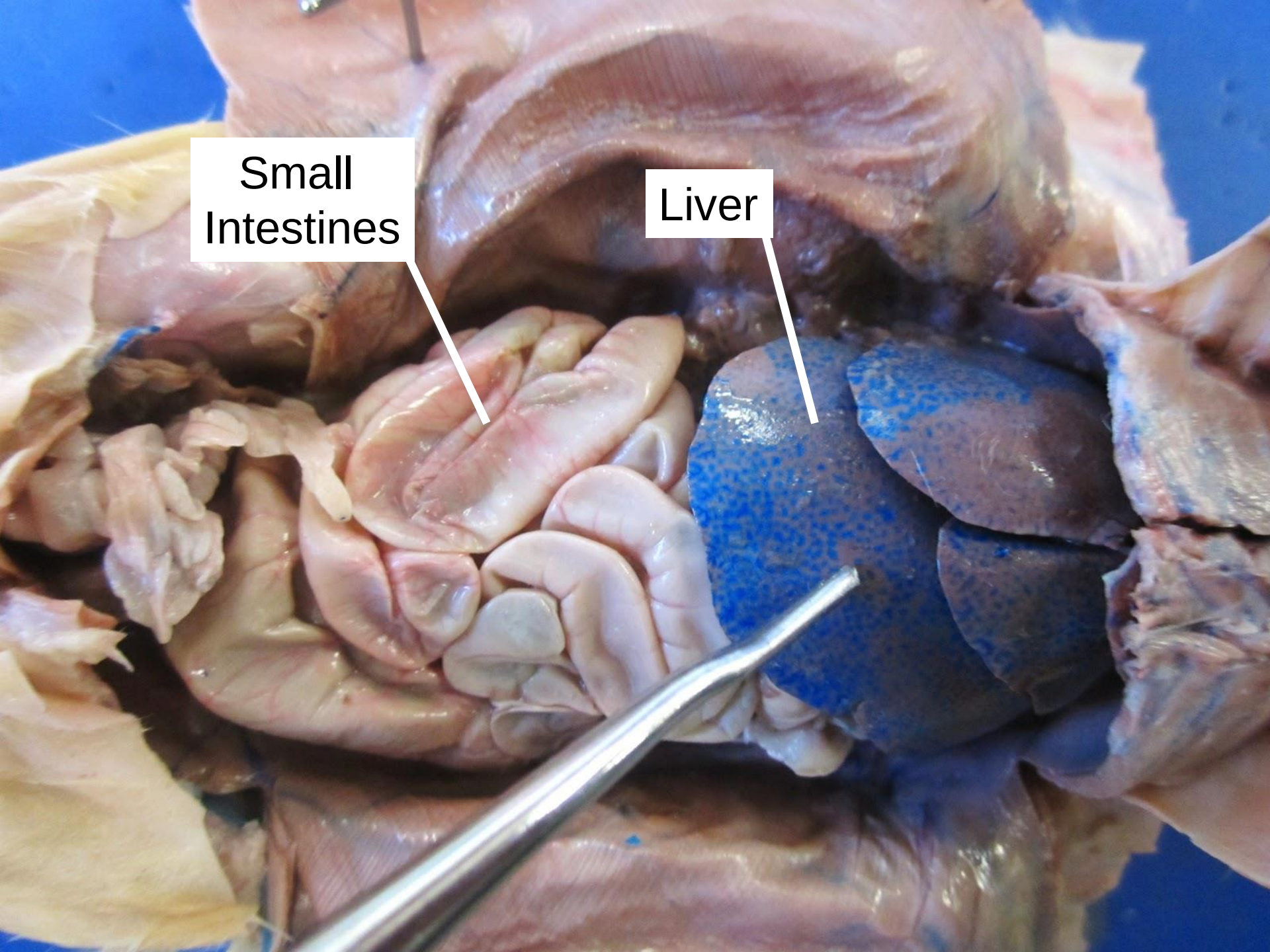
Functions of the Internal Anatomy of a Frog:

- **Large Intestine -** Posterior organ of the digestive system which stores undigested food.
- **Liver -** Secretes bile and processes digested food molecules
- **Urinary Bladder -** The organ that collects and stores urine until released.
- **Fat Bodies -** Masses of fat in the body cavities of frogs. Needed for hibernating and mating
- **Spleen -** Organ in the frog's circulatory system that makes, stores, and destroys blood cells.
- **Cloaca -** Organ through which the products of the frogs digestive and urogenital system pass when discharged from the body.

Digestive System




Stomach
Pancreas


Small Intestines
Liver

Respiratory System

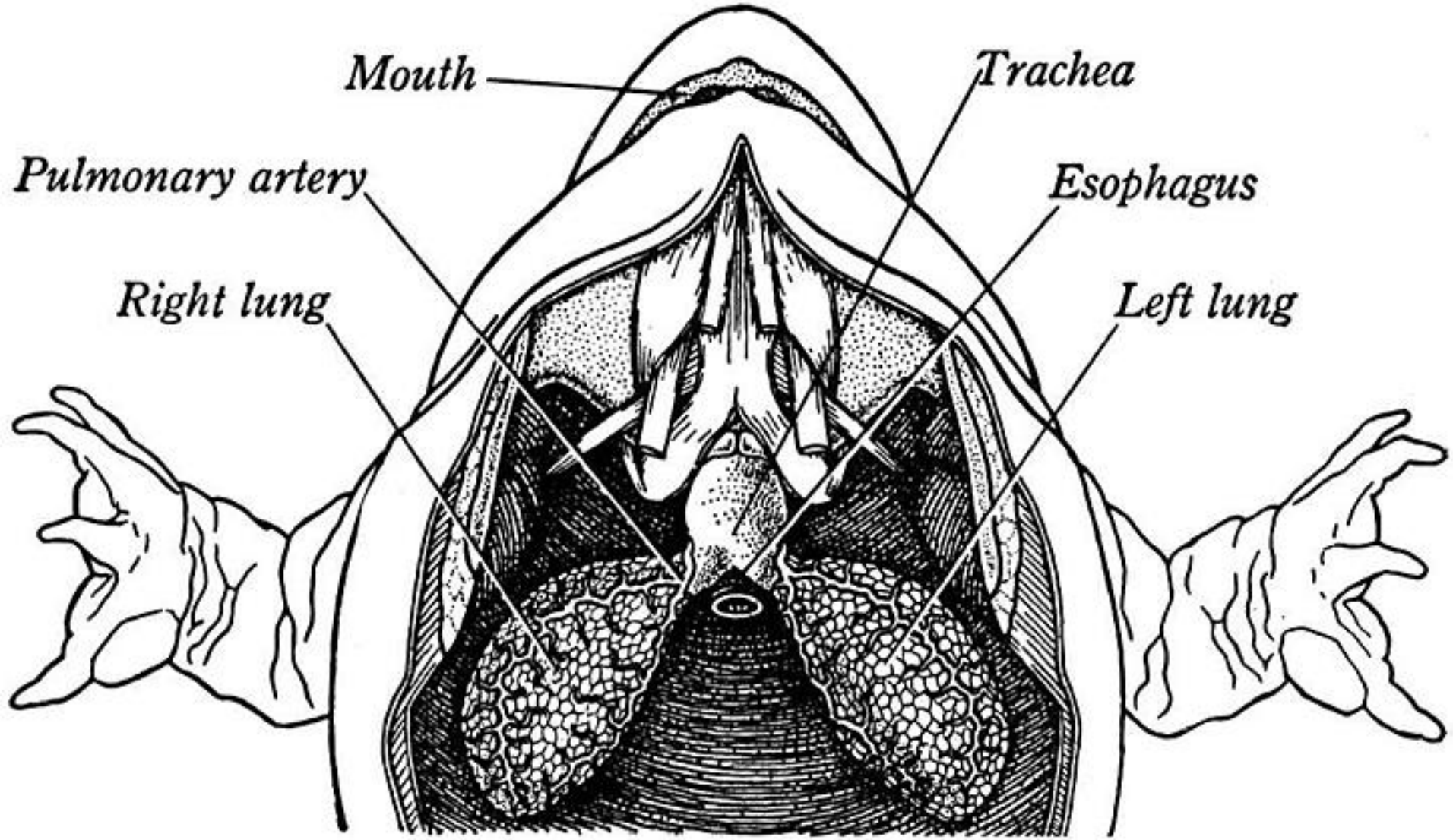
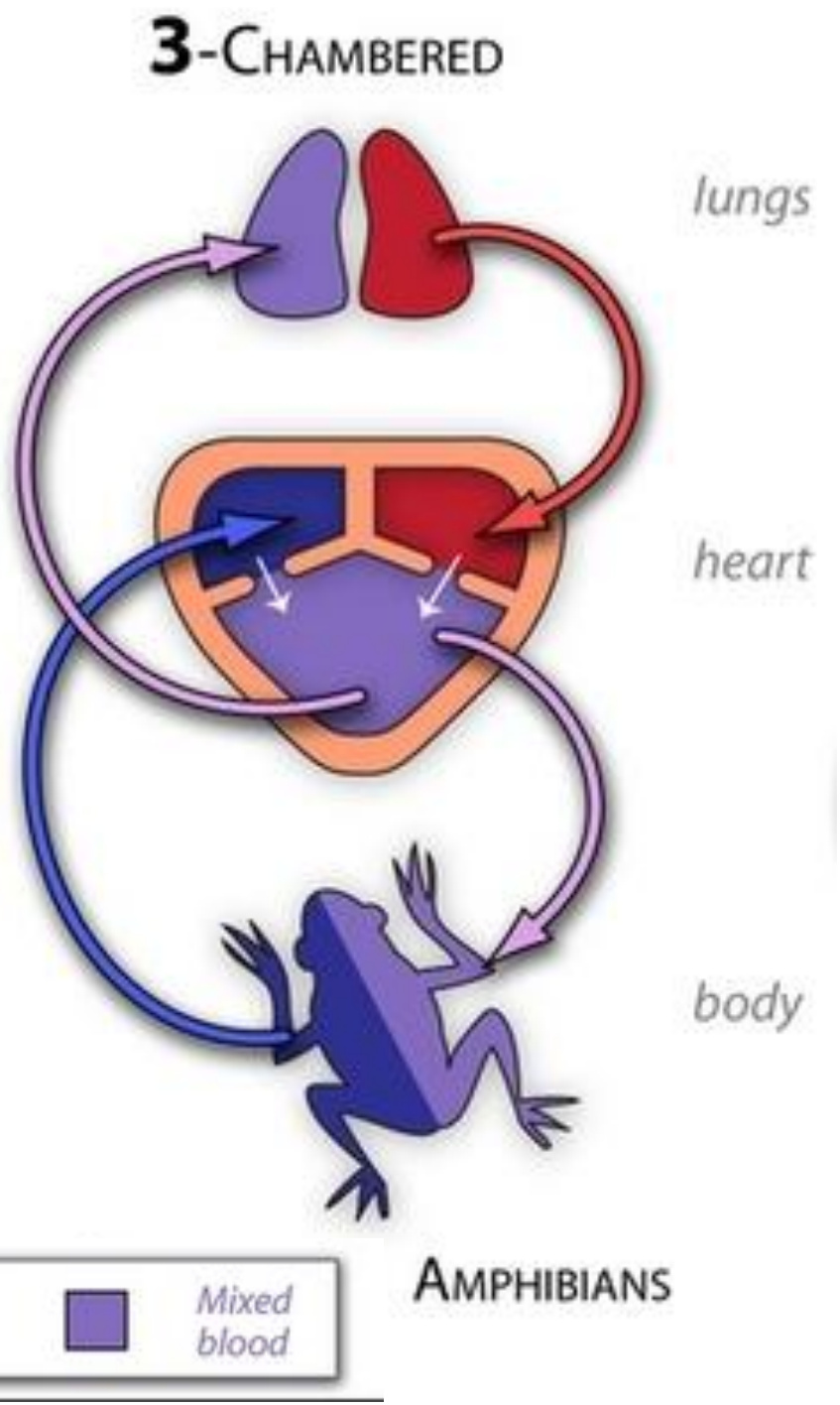
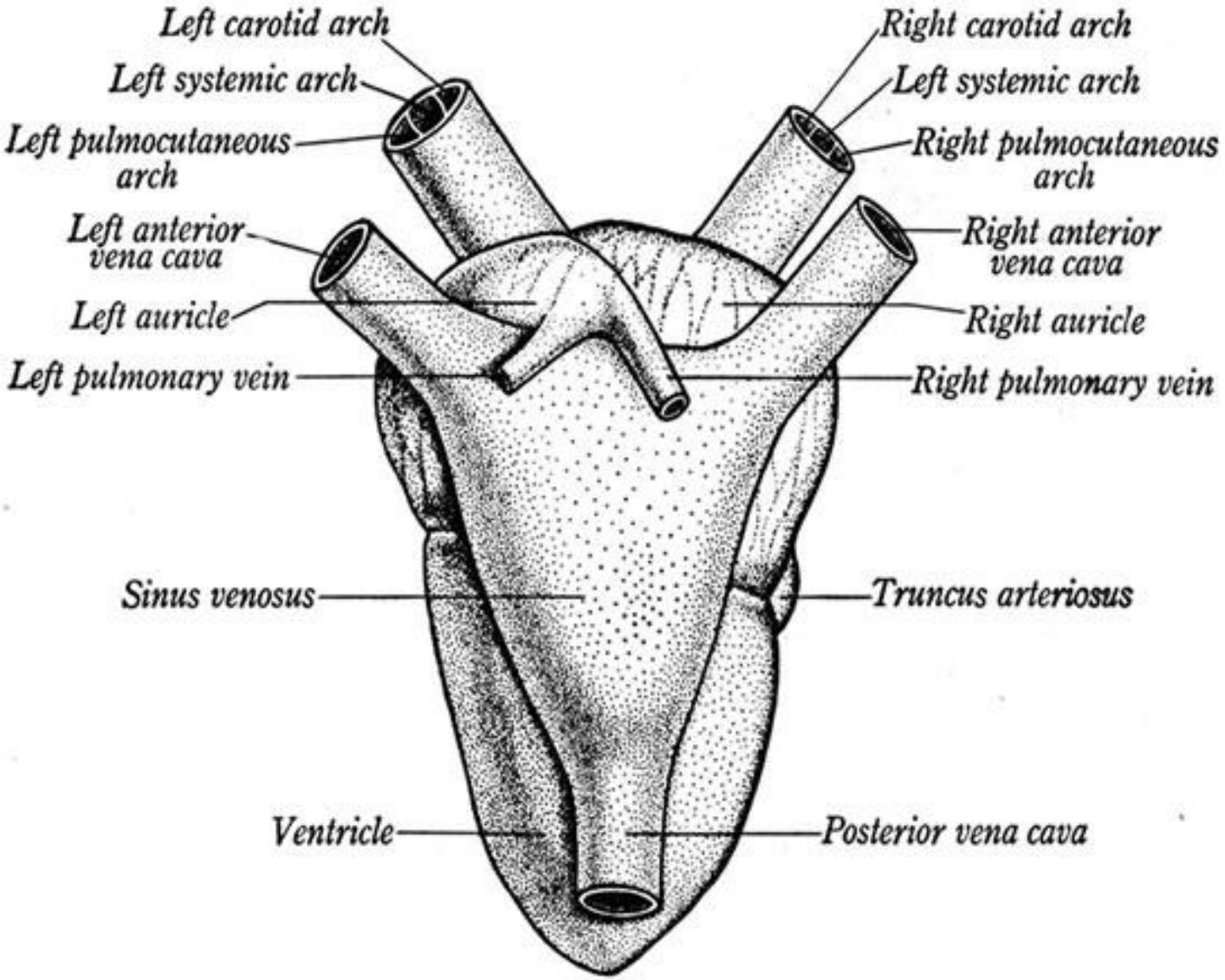


FIG. 388.—*Lungs of Frog.*

Circulatory System



Anatomy of a Frog Heart



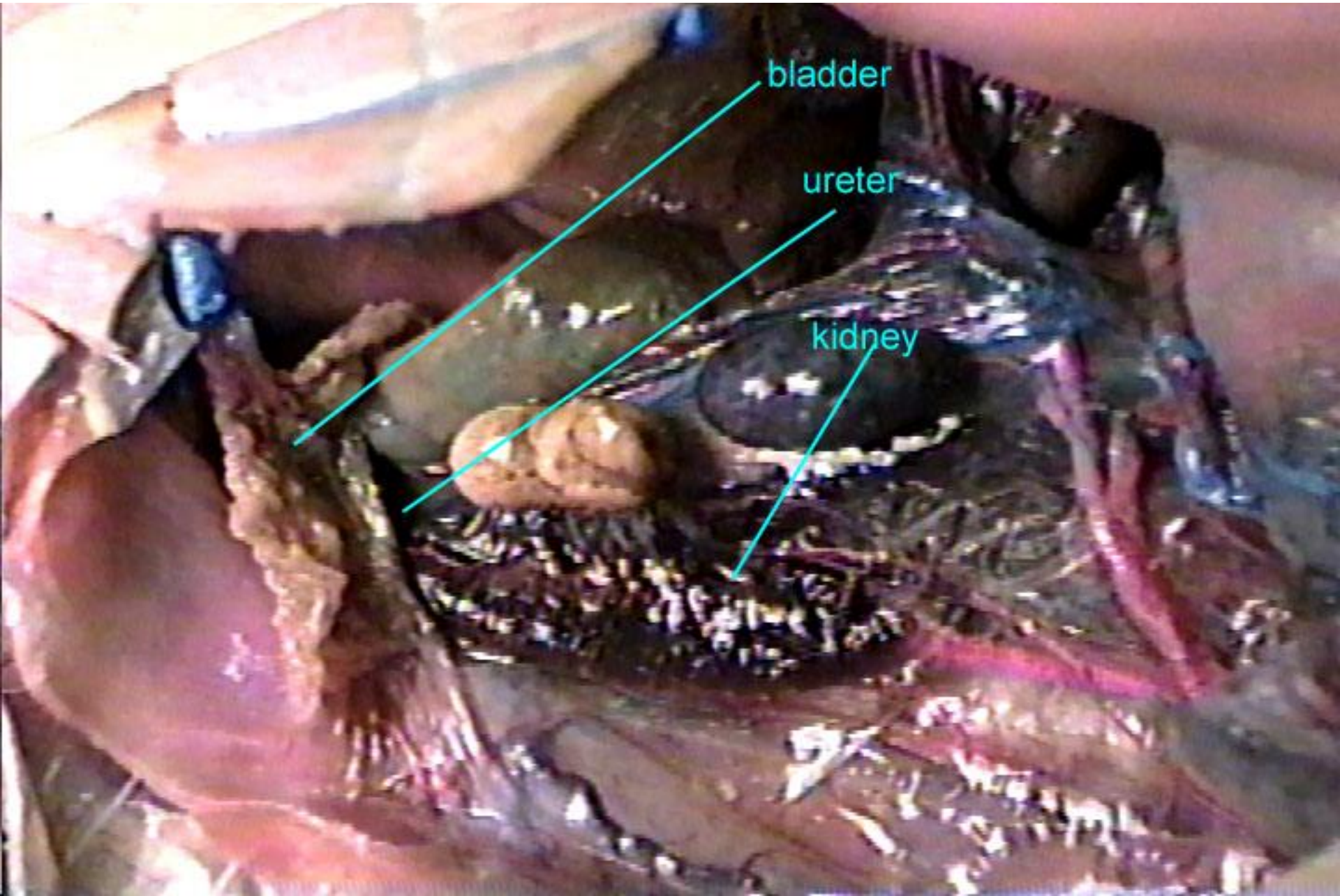
Functions of the Frog Heart

- **Heart -** Pumping organ of the circulatory system (has 3 chambers).
- **Anterior Vena Cava -** Large vein that carries blood from the anterior part of the body toward the heart.
- **Posterior Vena Cava -** Large vein that carries blood from the posterior part of the body towards the heart.
- **Sinus Venosus -** Sac that receives blood from the vena cava

Functions of the Frog Heart

- **Right Atrium -** Chamber of the frogs heart which receives blood from the sinus venosus.
- **Left Atrium -** The chamber of the heart that receives blood from the lungs.
- **Pulmonary Veins -** The blood vessels that carry blood form the lungs to the left atrium.
- **Ventricle -** Chamber of a frog's heart that pumps blood out of the heart to the lungs and other parts of the body.
- **Truncus Arteriosis -** Large artery in a frog that carries blood away from the ventricle into branches that lead to all parts of the body.

Urinary System



Frog Kidneys

- The kidneys of a frog, like many other animals, filter the blood and excretes excess water. The ureters then carry the urine from the kidneys to the urinary bladder.

Frog Brain

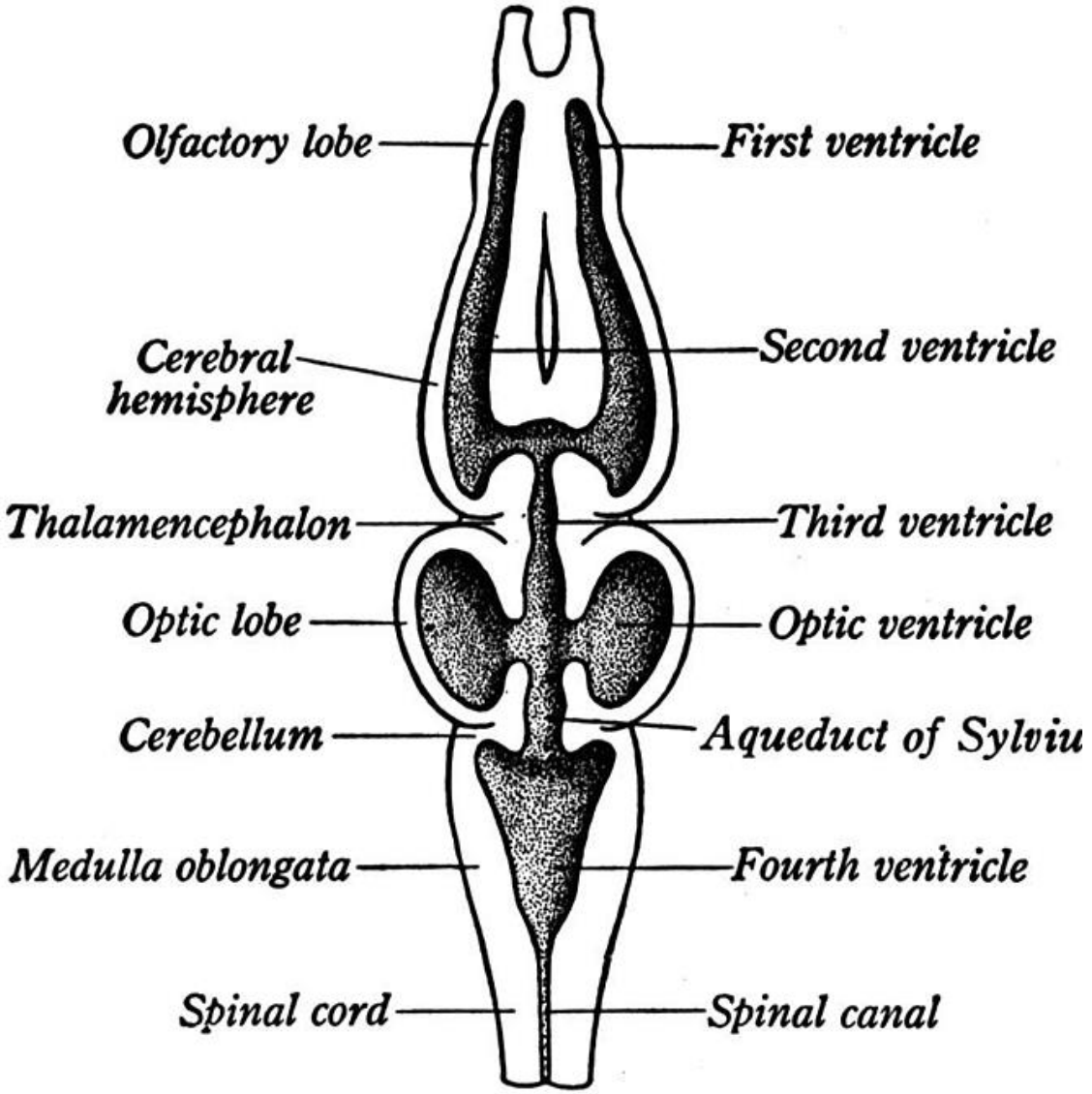


FIG. 410. *Ventricles of Brain of Frog*

Functions of the Frog Brain

- **Spinal Cord -** Main pathway to and from the brain
- **Spinal Nerves -** Nerves that lead to and from the spinal cord
- **Olfactory Lobe -** Part of the frog's brain associated with the sense of smell
- **Cerebrum -** Part of the brain that is associated with memory, pain, and voluntary muscle control.
- **Optic Lobes -** Part of the brain associated with vision.

Functions of the Frog Brain

- **Cerebellum -** Part of a brain that influences balance and equilibrium.
- **Medulla Oblongata -** Part of a brain that is the center for some involuntary functions.
- **Cranial Nerves -** Nerves that lead to and from the brain.

Frog Reproductive System

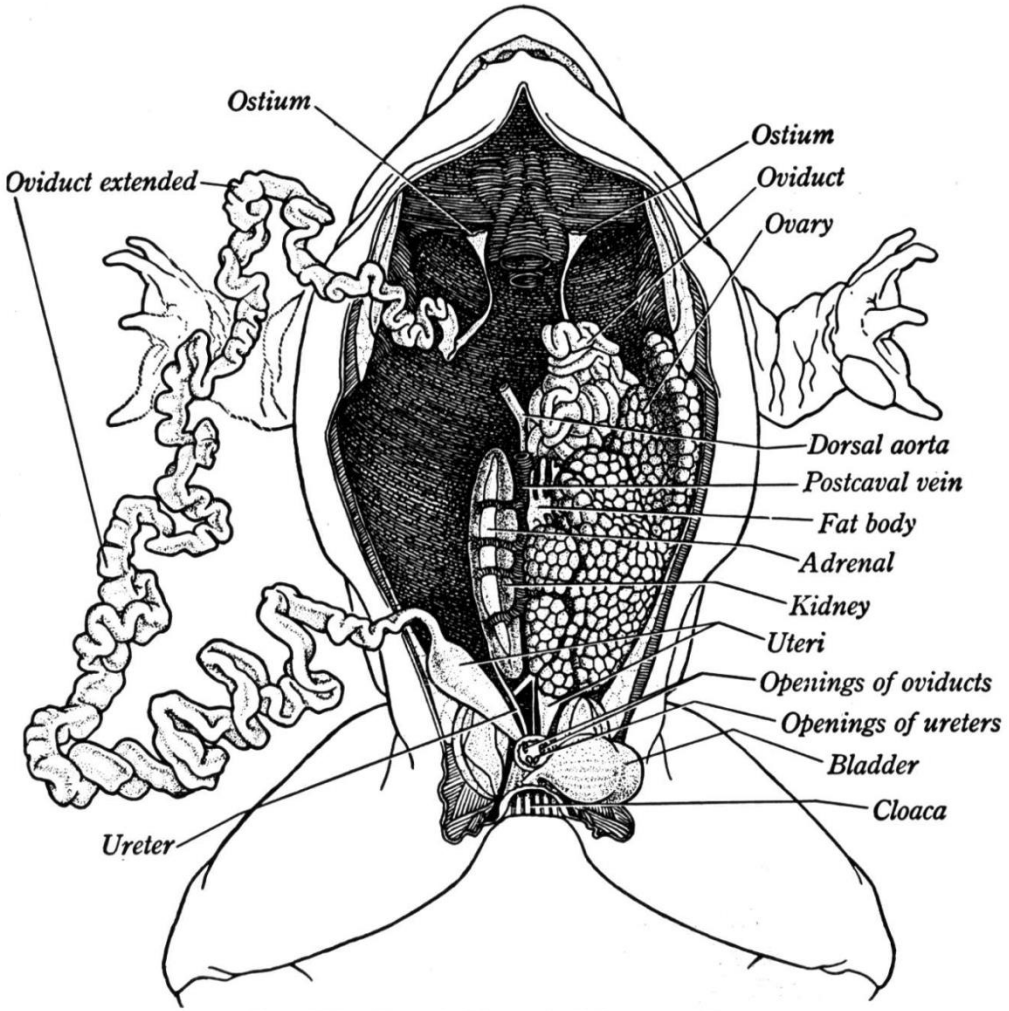
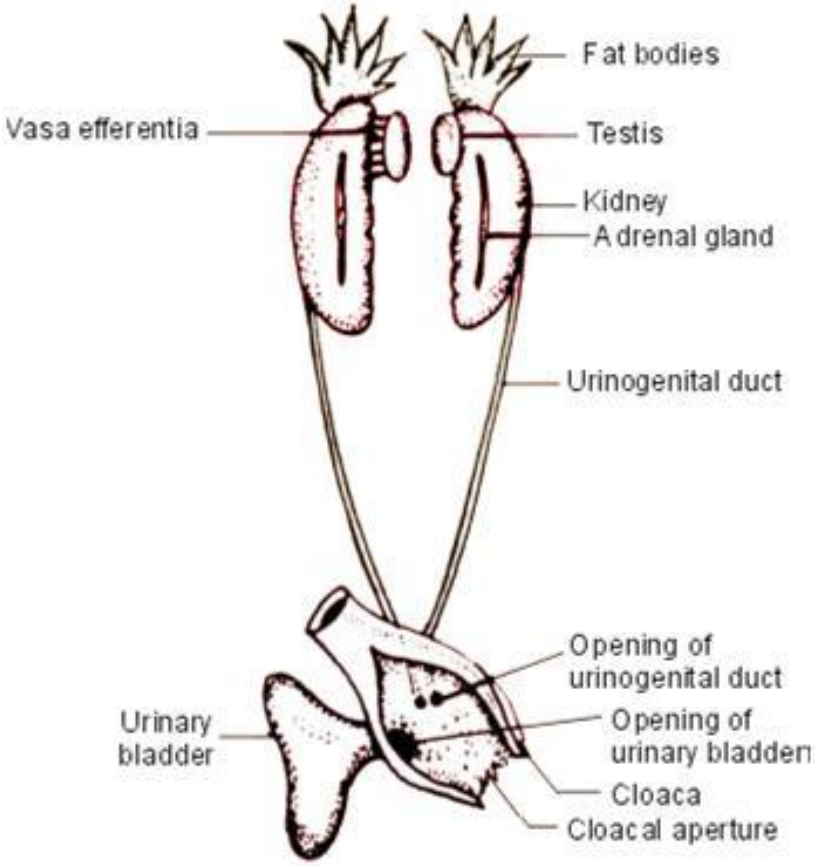


FIG. 399. *Female Urogenital System of Frog*



Urinogential system of male frog

Frog Reproductive System Functions

- **Urinary Ducts -** Tubes in a frog that carry urine from the kidneys to the cloaca
- **Urinary Bladder -** The organ that collects and stores urine until released.
- **Adrenal Glands -** Organs located near the kidneys which secrete hormones.
- **Ova or Eggs -** Female sex cell or gametes
- **Fat Bodies** - The **fat bodies** are needed for hibernating, metamorphosis and for mating. These are areas in the**body** containing stored energy.

Frog Reproductive System Functions

- **Ovaries -** Organs of the female reproductive system that produce the eggs.
- **Oviducts -** Tubes of a female frog's reproductive system that carry eggs from the ovaries to the cloaca.
- **Testes -** Male sex organs that produce sex cells (sperm).
- **Sperm -** Male sex cell or gametes.
- **Seminal Vesicles -** Enlarged distal sections of the male frog's urinary ducts that collect sperm prior to entry into the cloaca.