

# ANIMAL EXCRETION

## FUNCTIONS:

- excretion of waste metabolic products and toxins
- regulates amount of water in the body = homeostasis
- production of urine

## TYPES OF EXCRETION:

### 1. protozoa (unicellular org.)

- simple diffusion
- pulsing vacuoles = provide regular receiving water

### 2. higher multicellular organisms

- for excretion have developed specialized structures or organs
- the same principle of work: filtrate body fluid

#### a) flatworms (ploskavce):

PROTONEPHRIDIA = contain flame cells (plamienkové bunky)

- system of canals which have 1 general duct out of the body

#### b) annelids (obručkovce):

NEPHRIDIA = 1. segment = spiral ciliated cell

2. segment = tube that releases urine on the body surface

#### c) arthropods (článkonožce):

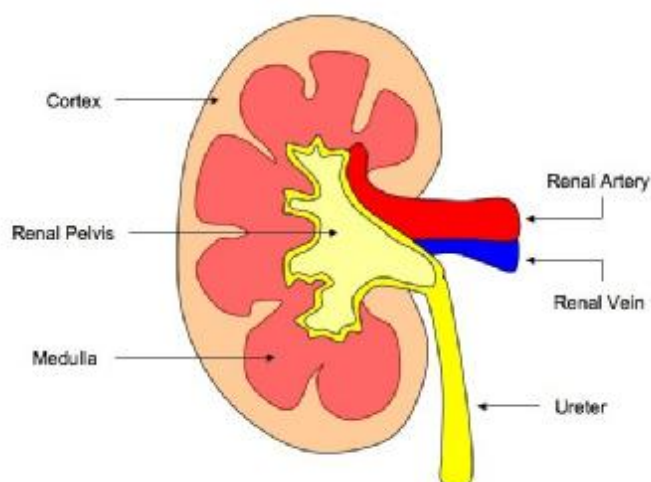
MALPHIGIAN GLANDS = tubules that release fluid into intestine

#### GLANDS ON ANTENNAE

#### d) vertebrates (stavovce):

KIDNEYS (nephros) - organs with basic structural unit nephron

- paired organs



## MAMMALIAN KIDNEY