# PHYLUM: CHORDATA

# CLASS: AVES

# (BIRDS)

# MORPHOLOGY

EAR located in the back part of the eye between special feathers

Mobile eyelids

**NOSTRIL**
Located on the upper beak

The mouth is located at the end of the beak covered with a keratin
There are scales on the beak

**HEAD**

Forelimbs modified as wings

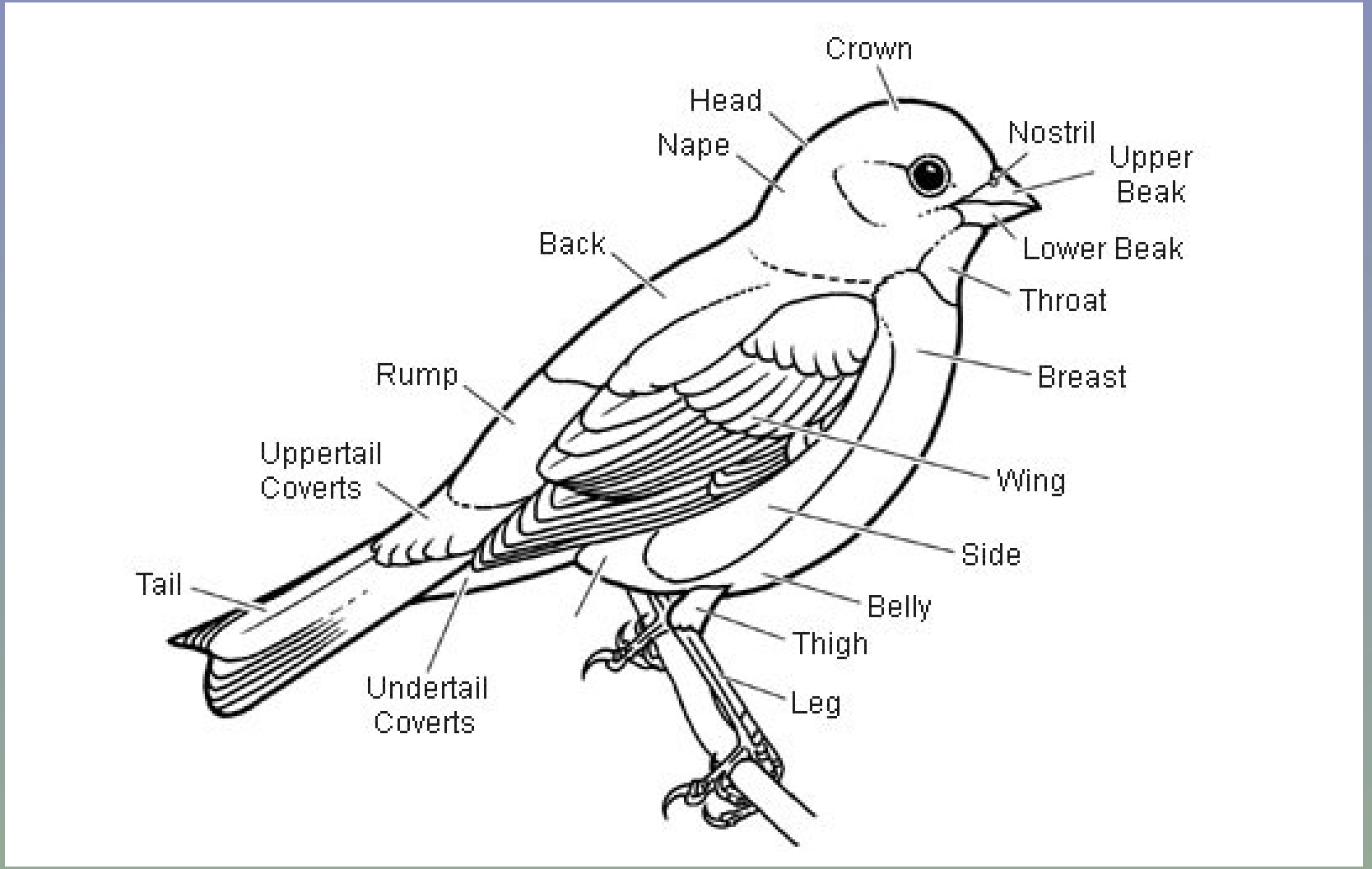
**NECK**

Neck elongate and S-shaped

**TRUNK**

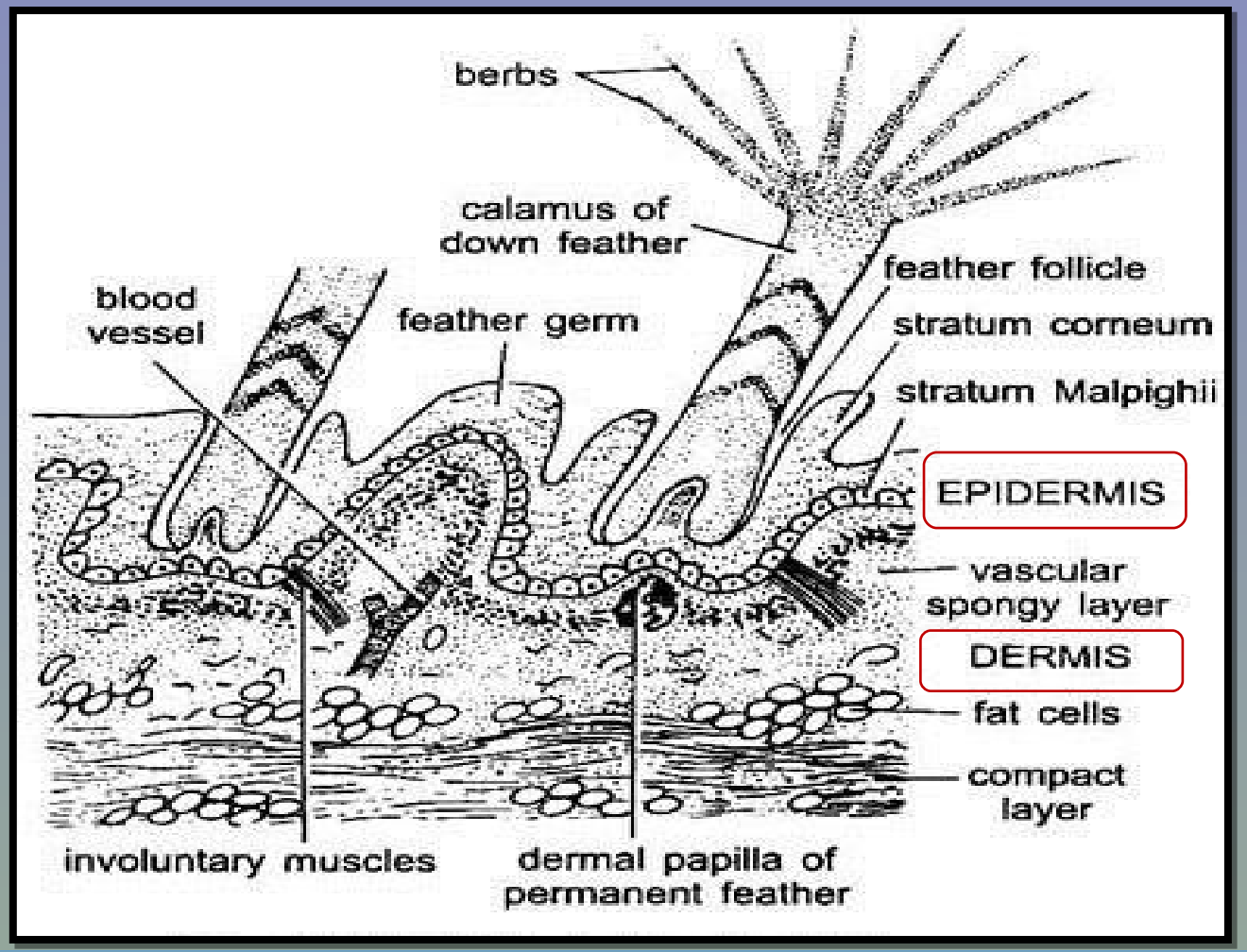
**TAIL**

# Body Structure of Birds



# SKIN AND COLOR

Epidermal coverting of **feathers** and **leg scales**




**No secretory glands on the skin**

**Oil gland only found at the base of tail**

Unlike other vertebrate animals

**THE EPIDERMIS AND DERMIS ARE QUITE THIN AND LESS KERATINISED**

# STRUCTURE DERIVED FROM INTEGUMENT

- Beak
- Nails
- Feather
- Scales on beak and hindleg

**EPIDERMAL ORIGIN**

**BEAK:** Many different beak shapes are seen depending on the variety of food.

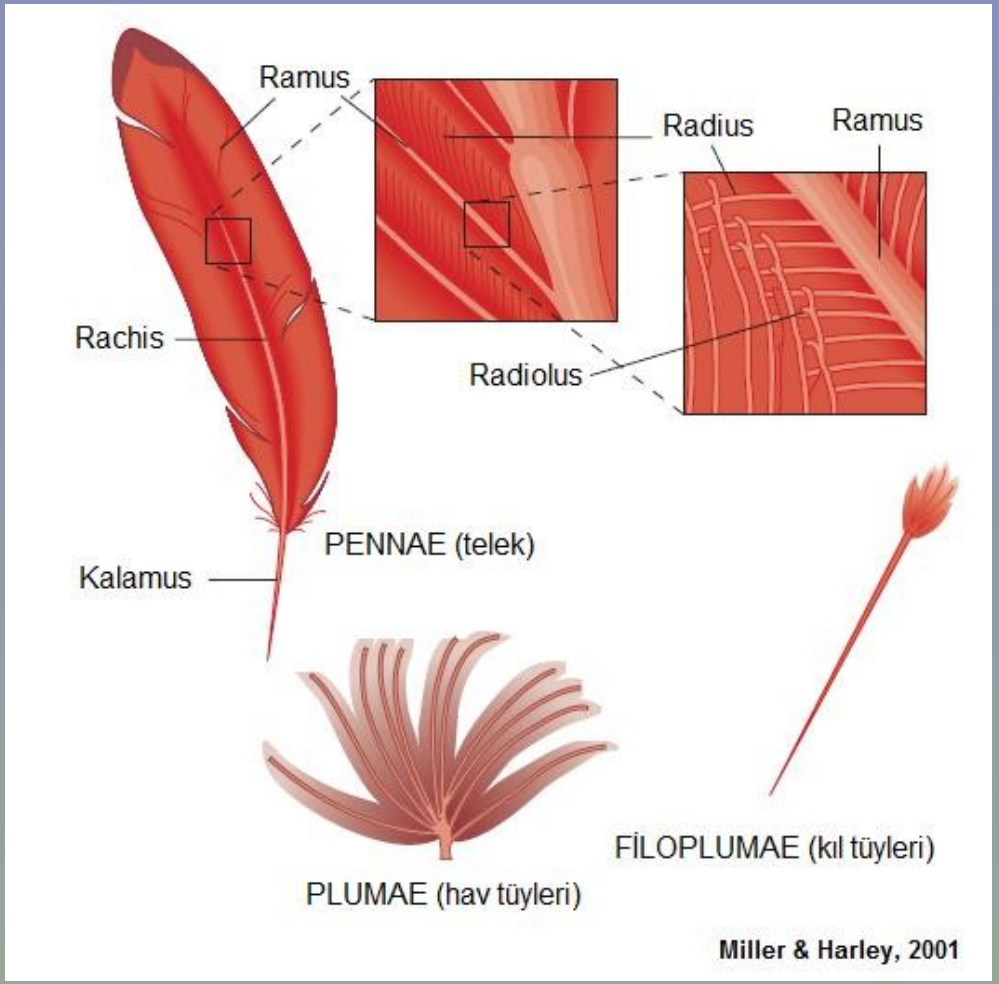
**Functions**

- Catching, transporting, chopping and eating food
- Fix feather
- Nesting
- Protection against enemies

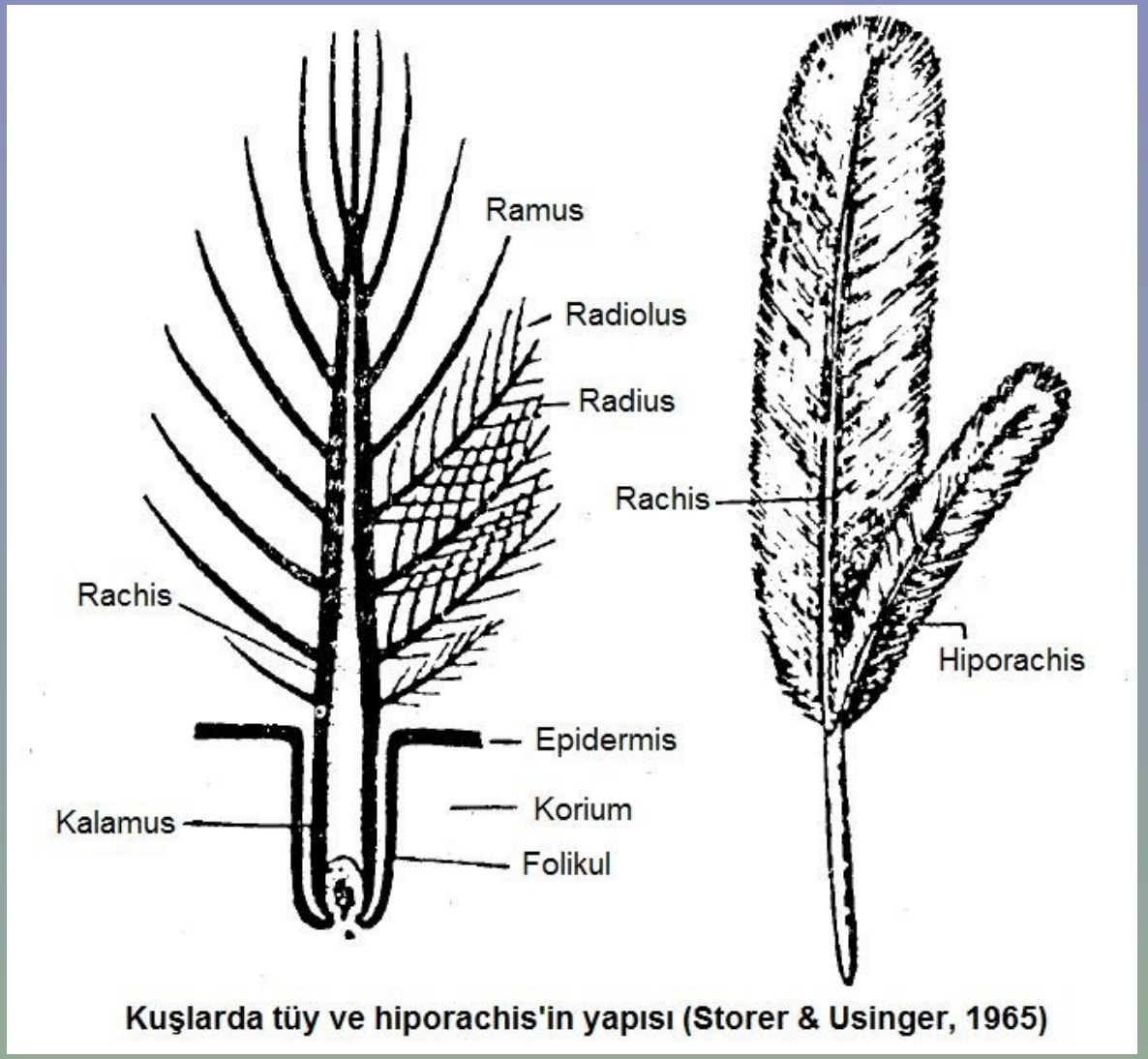
**Nails;** special shaped scales for protecting the fingertips. In many nails, as the upper part grows faster, an inwardly curved structure arises.

**Functions:** Used for disinterment; tearing; fighting; cleaning feathers

# Bird Feathers

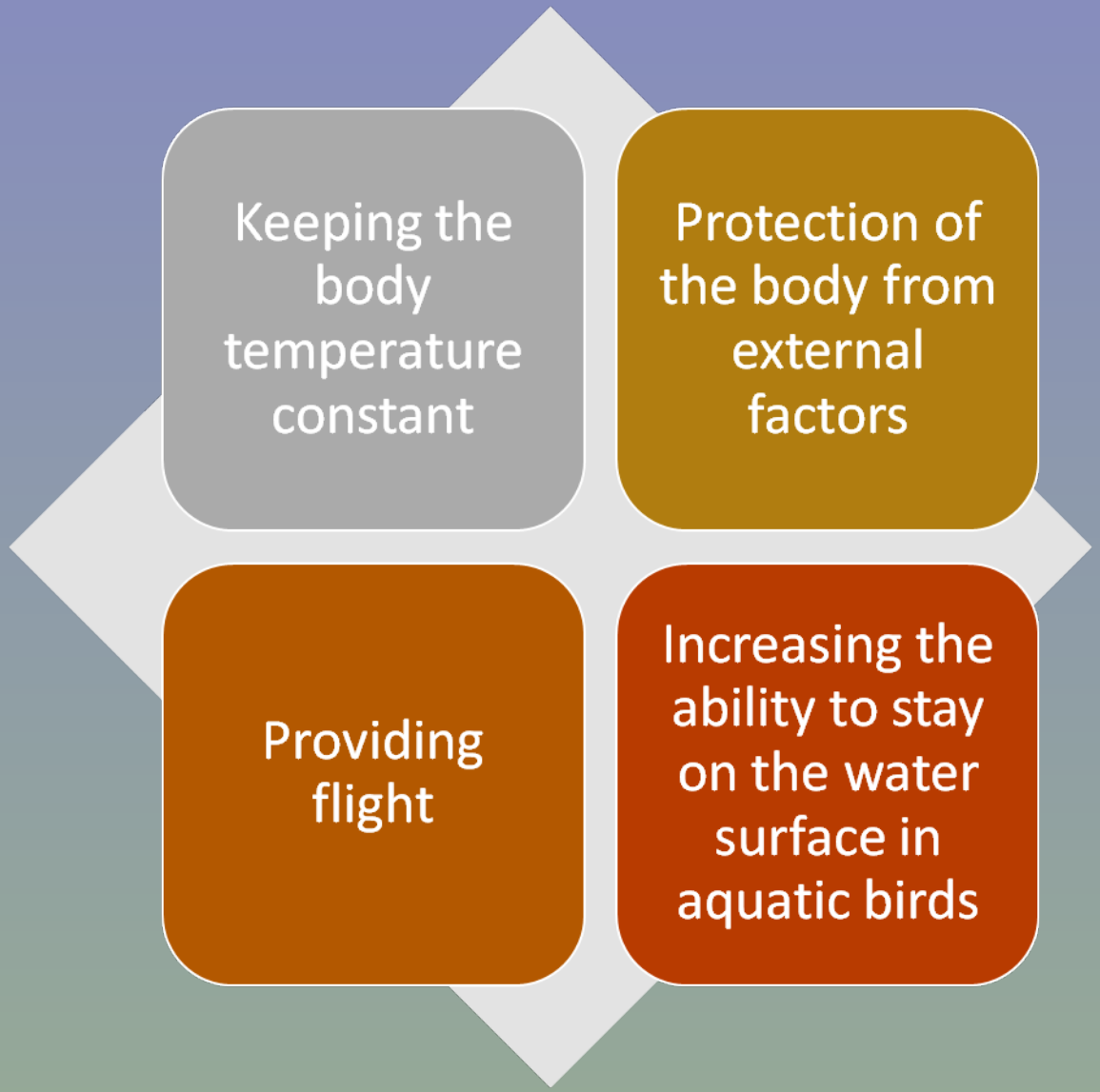


# Bird Feathers




Kuşlarda tüy ve hiporachis'in yapısı (Storer & Usinger, 1965)

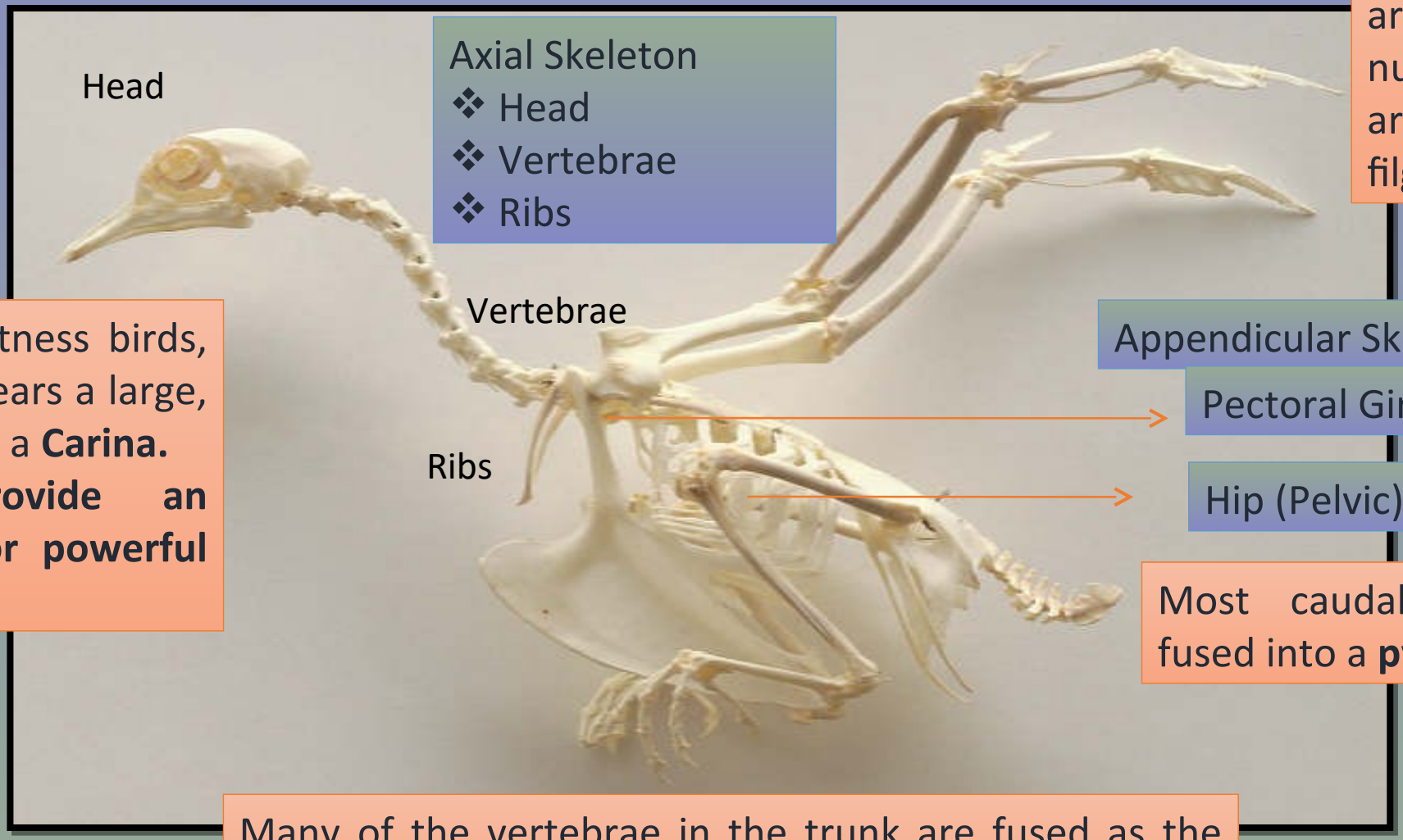
# Functions of Feathers



# SKELETON SYSTEM

**Pneumatic Bone**

Bones of forelimbs are reduced in number and several are fused together for filght




Axial Skeleton
- ❖ Head
- ❖ Vertebrae
- ❖ Ribs

Except in flightness birds, the sternum bears a large, thin keel called a **Carina.**
**Function: Provide an attachment for powerful flight muscle**

Appendicular Skeleton
- Pectoral Girdle
- Hip (Pelvic) Girdle

Most caudal vertebrae are fused into a **pygostyle**

Many of the vertebrae in the trunk are fused as the **Synsacrum**

# Beak Types

# Types of Bird Feet