

✓✓ Skull of Guineapig, *Cavia* (Fig. 2.14) [Mammalia, Eutheria, Rodentia]

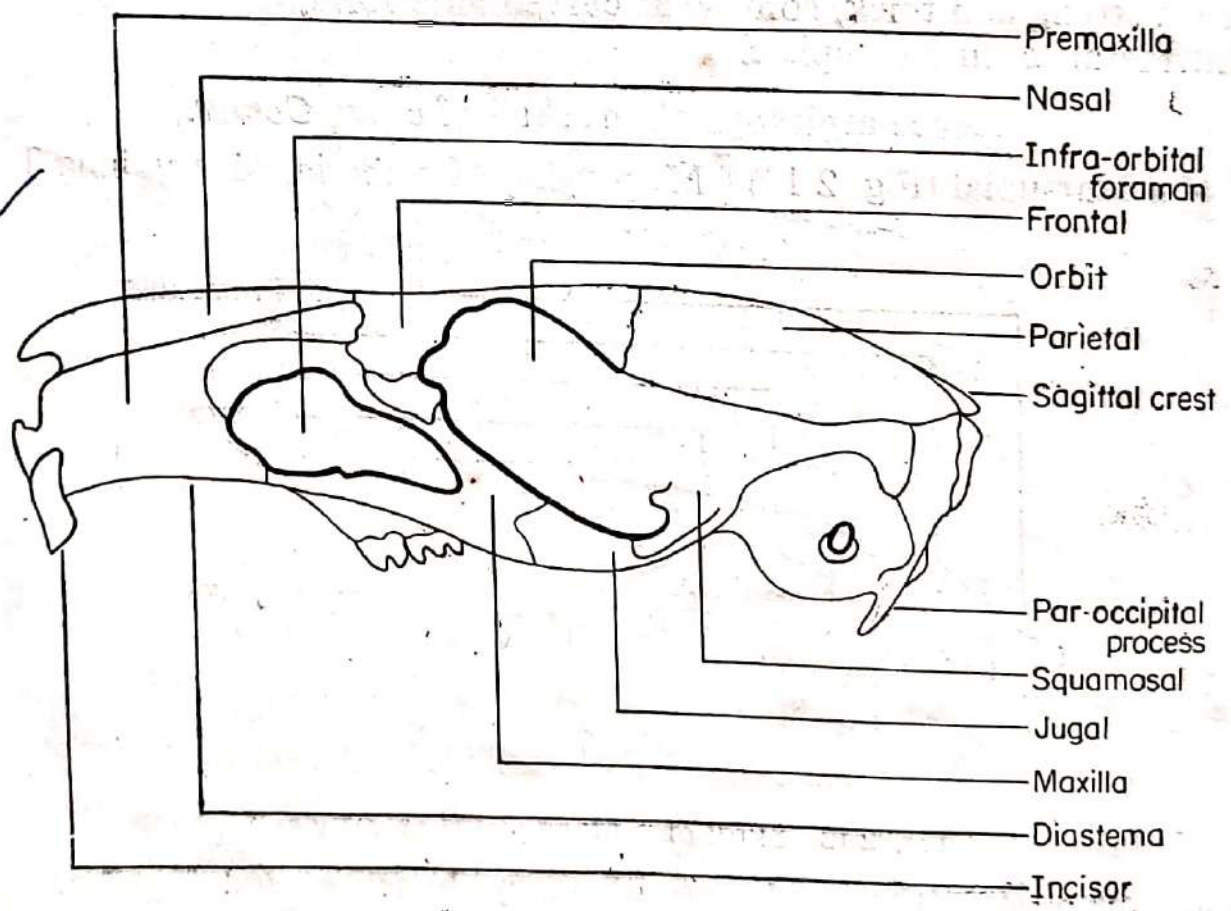


Fig. 2.14 Skull of *Cavia* (Lateral view)

1. Compound structure made up of many bones united together and enclosing a central cavity.
2. Occipital condyle, Foramen magnum and sensory capsules present.

Hence, a Skull.

1. **Sutures distinct.**
2. **Occipital condyle two.**
3. **Well-developed Zygomatic arch (formed by Maxilla, Jugal & Squamosal).**
4. **Secondary palate.**
5. **Squamosal bears on its undersurface a concavity, Glenoid fossa, for articulation with the mandible.**
6. **Scroll (naso-turbinal) bones within the nasal cavity.**
7. **Heterodont, thecodont dentition.**

Hence, Skull of a mammal.

1. Secondary palate without large posterior vacuities.
2. Tympanic bone fused with the skull.
3. Base of zygomatic arch not perforated.

Hence, Skull of a eutherian mammal.

1. Temporal and orbital fossa confluent.
2. Posterior border of orbit incomplete.
3. Zygomatic arch slender and outwardly curved.
4. Chisel-shaped single incisor in each half.
5. Well-developed diastema, canine being absent

Hence, Skull of Rodentia,

1. Paroccipital process slender.
2. Large infra-orbital foramen.
3. Dental formula $1.0.1.3.$

Hence, Skull of Guinea pig, *Cavia*.

Skull of Dog, *Canis*. (Fig. 2.15) [Mammalia, Eutheria, Fissiped carnivora]

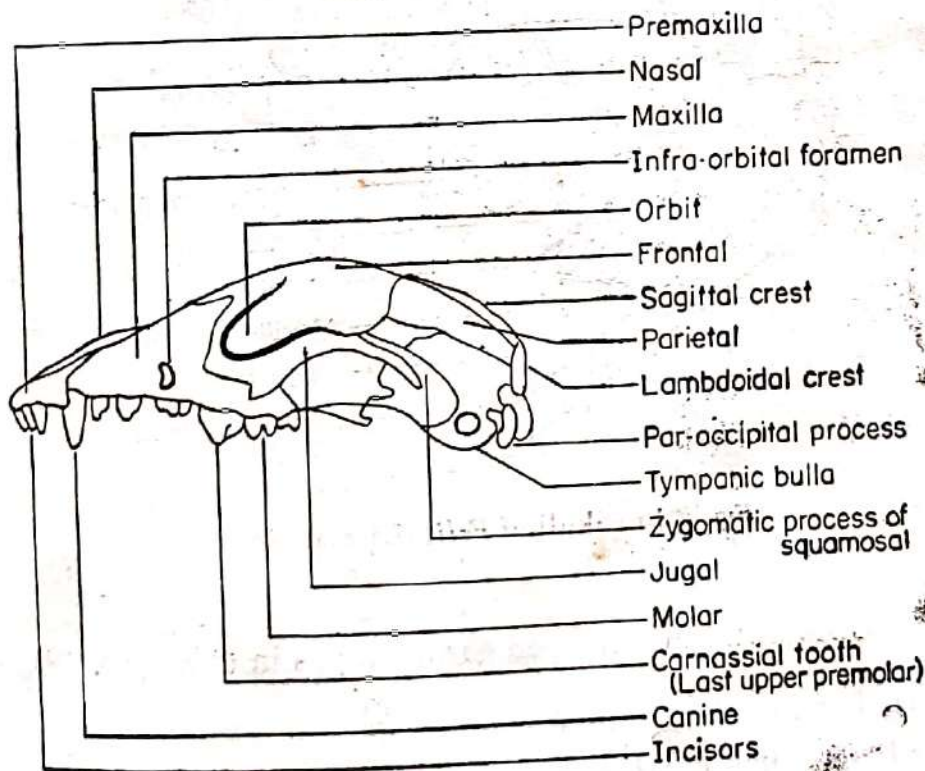


Fig. 2.15 Skull of *Canis* (Lateral view)

Upto Skull of a eutherian mammal, as in *Cavia*. (p. 18)

1. Temporal and orbital fossa confluent.
2. Posterior border of orbit incomplete.

3. Zygomatic arch strong and outwardly curved.
4. Incisors 3 and comparatively small.
5. Canine large, pointed and slightly recurved.

Hence, Skull of a fissiped carnivore.

1. Facial part elongated.
2. Tympanic bulla not much inflated.
3. Paroccipital process not closely applied to the bulla.
4. Last premolar modified into a carnassial tooth.
5. Dental formula 3.1.4.2.

Hence, Skull of Dog, *Canis*.

Skull of a toad, *Bufo* (Fig. 2.1) [Amphibia, Anura]

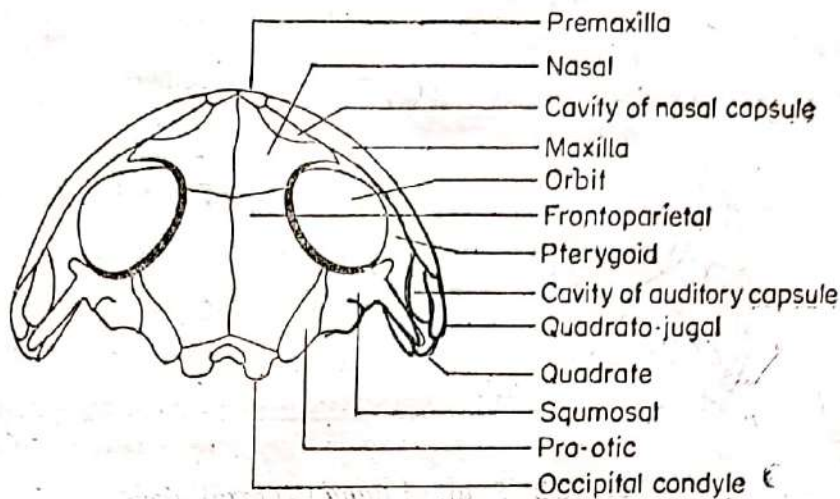


Fig. 2.1 Skull of *Bufo* (Dorsal view)

1. Compound structure made up of bones and cartilages united together and enclosing a central cavity.

2. Occipital condyle, Foramen magnum and sensory capsules present.

Hence, a skull.

1. Skull much flattened.

2. Sutures distinct.

3. Occipital condyle two.

4. Pro-otic bone visible externally.

5. Frontal, Parietal, Nasal and Vomer well-developed and paired.

6. Parasphenoid well-developed and unpaired.

Hence, Skull of an amphibia.

1. Skull short and wide.

2. Frontal and Parietal fused into a Fronto-parietal.

3. Parasphenoid dagger-shaped.

4. Palatine is a slender transverse bar.

5. Pterygoid is tri-radiate forming the posterior border of orbit.

Hence, Skull of an anuran amphibia.

1. Anterior end of skull blunt.

2. Supra-orbital ridge well-developed.

3. Fronto-parietal wide,

4. Teeth absent.

Skull of a frog, *Rana* (Fig. 2.2) [Amphibia, Anura]

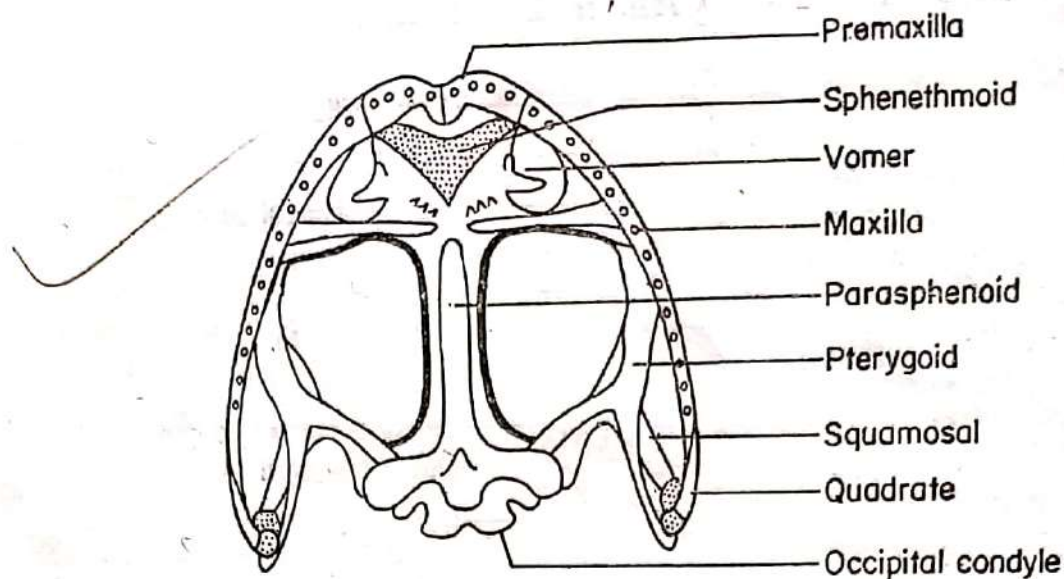


Fig. 2.2 Skull of *Rana* (Ventral view)

Upto Skull of an anuran amphibia, as in *Bufo* (p. 9)

1. Anterior end of skull pointed.
2. Supra-orbital ridge absent.
3. Fronto-parietal narrow.
4. Teeth present.

Hence, Skull of frog, *Rana* sp.

Skull of a turtle, *Chelonia* (= *Chelone*) (Fig. 2.4) [Reptilia, Anapsida, Testudines = *Chelonia*]

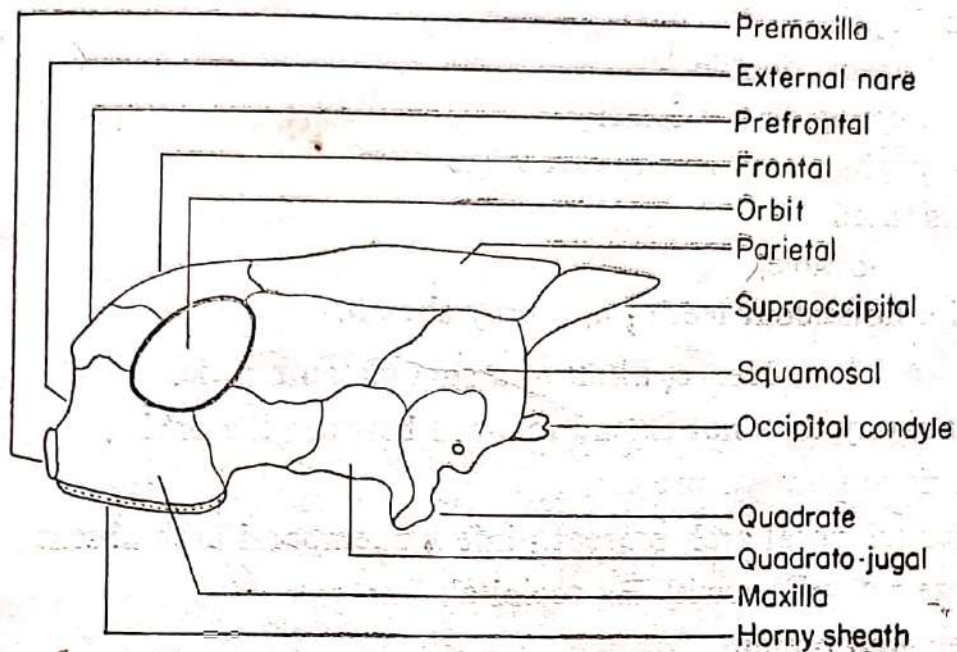


Fig. 2.4 Skull of *Chelonia* (Lateral view)

Fig. 20 Skull of a frog

1. Compound structure made up of many bones united together and enclosing a central cavity.
2. Occipital condyle, Foramen magnum and sensory capsules present.

Hence, a Skull.

1. Skull thick-walled, heavy, box-like.
2. Sutures distinct.
3. Occipital condyle one.
4. Beak absent.
5. Pre-maxilla not-tri-radiate.

Hence, Skull of a reptile.

1. Solid structure, all bones being immovably fixed.
2. True temporal fossa absent.

Hence, Skull of an anapsid reptile.

1. External nostril single.
2. Occipital condyle tripartite.
3. Supra-occipital large with a dorsal crest.
4. Parietals not fused ; no interparietal foramen.
5. Quadrate immovable.
6. Jaw toothless and covered by a horny sheath.

Hence, Skull of a chelonian reptile.

1. One backwardly directed process present (formed by Supra-occipital).
2. Premaxilla small and in contact with Vomer.

Hence, Skull of turtle, *Chelonia* (= *Chelone*) sp.

Skull of a lizard, *Geckos* (Fig. 2.5) : Reptilia, Lepidosauria, Squamata, Lacertilia.

Skull of a lizard, *Calotes* (Fig. 2.5) [Reptilia, Lepidosauria, Squamata, Lacertilia]

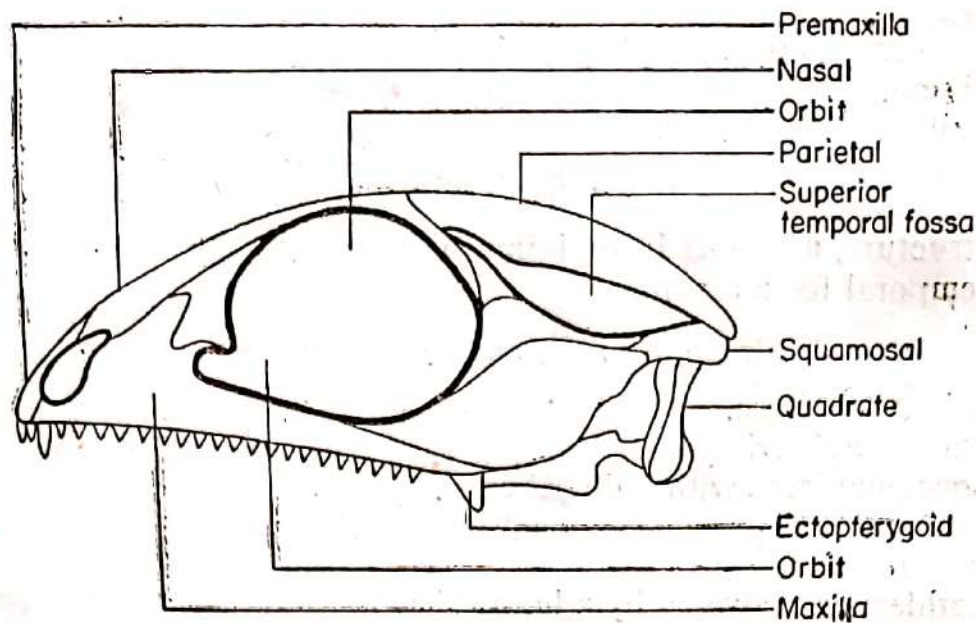


Fig. 2.5 Skull of *Calotes* (Lateral view)

Upto Skull of a reptile, as in *Trionyx* (p. 11)

1. Skull diapsid with 2 temporal fossae.
2. No ant-orbital vacuity,
3. No secondary palate.

Hence, Skull of a lepidosaurian reptile

(Note : Characters no. 2 & 3 distinguish the lepidosaurian skull from archosaurian skull which is also diapsid)

1. External nostril double.
2. Occipital condyle not tripartite.
3. Supra-occipital without a dorsal crest.
4. Parietals fused.
5. Quadrate movable.
6. Jaw with homodont teeth ; no horny sheath.

Hence, Skull of a squamatan reptile.

1. Cranial cavity does not extend forward between the orbits.
2. Interparietal foramen present.
3. Superior temporal arch present ; inferior temporal arch absent.
4. Quadrate articulates with Ex-occipital.
5. Epi-pterygoid present.

Hence, Skull of a lacertilian reptile.

1. Facial part short.
2. Teeth acrodont.
3. Frontal without a ventral process.

Hence. Skull of lizard, *Calotes*.

✓✓ Skull of domestic pigeon, *Columba*. (Fig. 2.8) [Aves, Neognathae, Schizognathae]

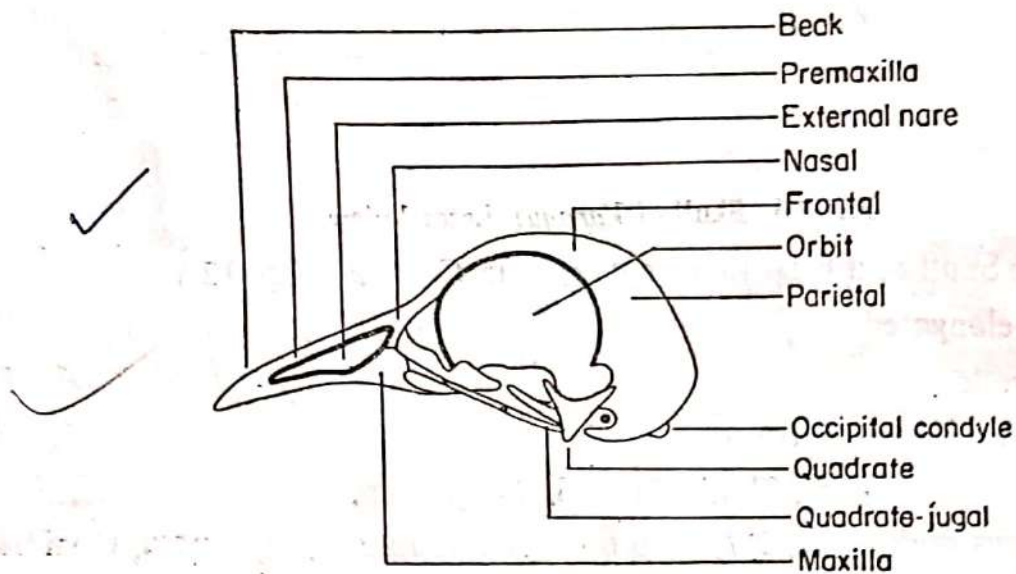


Fig. 2.8 Skull of *Columba* (Lateral view)

1. Compound structure made of many bones united together and enclosing a central cavity.
2. Occipital condyle, Foramen magnum and sensory capsules present.

Hence, a Skull.

1. Skull thin-walled, light in weight and rounded in form.
2. Sutures almost obliterated.
3. Occipital condyle one.
4. Well-developed beak.
5. Premaxilla tri-radiate.
6. Foramen magnum directed downward.

Hence, Skull of a bird.

1. Teeth absent.
2. Quadrate highly movable and has double articulating head.
3. Palatine extends backward and makes contact with the base of skull.

Hence, Skull of a neognathous bird.

1. Maxillo-palatine processes slender and not united with one another.
2. Vomer absent.
3. Basipterygoid process small and posteriorly located.
4. External nostril elongated and slit-like.
5. Beak long, weak and gently arched at the anterior end.

Hence schizognathous skull of pigeon, *Columba*.