

KEY TO ORDERS OF MAMMALS

1a.	Forelimbs modified into wings	CHIROPTERA (p. 76)
1b.	Forelimbs not modified into wings.....	2
2a (1b).	Forelimbs modified into flippers.....	3
2b.	Forelimbs not modified into flippers	6
3a (2a).	Hindlimbs well-developed; teeth heterodont, with prominent canines	PINNIPEDIA (p.230)
3b.	Hindlimbs absent (vestigial of pelvic girdle present in some); teeth absent or, if present, homodont (rarely heterodont), never with prominent canines	4
4a (3b).	Nostrils located dorsally at end of snout; zygomatic arch robust	SIRENIA (p.260)
4b.	Nostril (blowhole) or nostrils located on top of head; zygomatic arch very slender.....	5
5a (4b).	Two external nostrils (blowholes) present; no teeth; baleen present; skull \pm symmetrical; nasals large, roofing part of nasal passage	MYSTICETI (p.240)
5b.	One external nostril (blowhole) present; teeth present; no baleen; skull often asymmetrical; nasals very small, not roofing any part of nasal passage.....	ODONTOCETI (p.247)
6a (2b).	No incisors or canines; cheekteeth absent or, if present, peg like	7
6b.	Incisors and/or canines present; cheekteeth always present, rarely peg-like	10
7a (6a).	Forefoot with 5 digits; epipubic bones present; no auditory bulla	MONOTREMATA (p. 30)
7b.	Forefoot with 2-4 digits; no epipubic bones; auditory bulla present	8

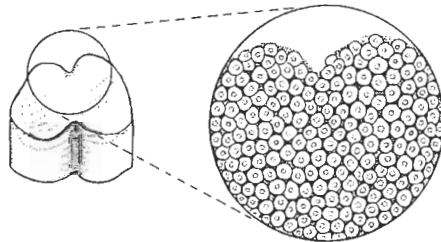


Figure 8. Enlarged view of a section of a molar of an armadillo (*Tubulidentata*), illustrating the numerous dentine tubes characteristic of the cheekteeth in members of this order.

- 8a (7b). Forefoot with 4 principal digits, each with shovel-shaped nails; cheekteeth present, consisting of numerous vertical tubes of dentine (Fig. 8) **TUBULIDENTATA** (p.142)
- 8b. Forefoot with 2-3 principal digits, each with long claws; cheekteeth absent or, if present, without vertical tubes of dentine9
- 9a (8b). Body covered with horny, overlapping scales; no jugal, lacrimal, or interparietal bones **PHOLIDOTA** (p.140)
- 9b. Body well haired or covered with armor of bony skin (scutes); jugal, lacrimal, and interparietal bones present **EDENTATA** (p.132)
- 10a (6b). Pouch (marsupium) or skin folds usually present on belly; braincase relatively small; jugal forming part of mandibular fossa (Fig. 9); angular process of lower jaw inflected **MARSUPIALIA** (p. 35)
- 10b. No pouch; braincase relatively large; jugal only rarely forming part of mandibular fossa; angular process of lower jaw straight or deflected (rarely inflected)11

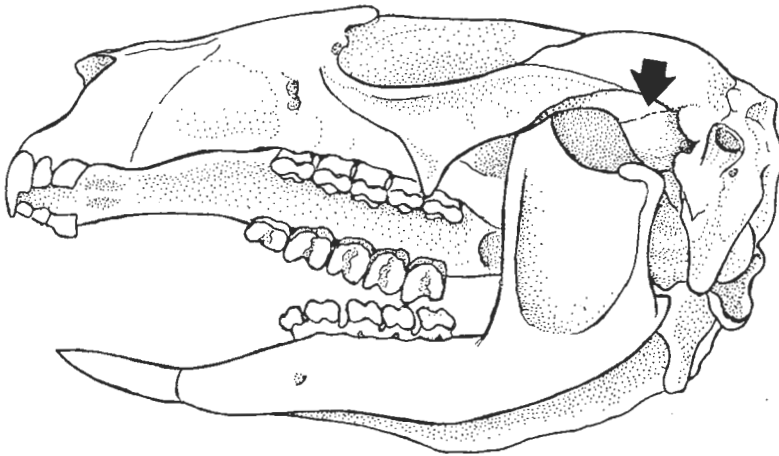


Figure 9. Lateral view of the cranium of a marsupial. Note participation of the jugal bone in mandibular fossa.

- 11a (10b). Skin (gliding) membrane surrounding entire body (between neck and forelimbs, forelimbs and hindlimbs, and hindlimbs and tail); cranium very shallow, flat; lower incisors procumbent and comb-like **DERMOPTERA** (p. 75)
- 11b. No skin membrane surrounding body; skull not excessively shallow and flat; lower incisors only rarely procumbent and comb-like12

12a (11b).	Pollex opposable; braincase large, rounded; rostrum short; orbits directed forward	PRIMATES (p.112)
12b.	Pollex not opposable; braincase usually small to medium in size; rostrum usually long; orbits usually directed laterally	13
13a (12b).	Size huge (weight of adults exceeding 4500 kg); snout extremely elongated into a proboscis (trunk); digits of feet wholly syndactylous and indistinct; only one functional cheektooth (or parts of two) per half jaw ...	PROBOSCIDEA (p.264)
13b.	Size very small to large (weight much less than 4500 kg); snout never extremely elongated (occasionally a short proboscis present); digits of feet at least partly separated; more than one functional cheektooth per half jaw	14
14a (13b).	Incisors 1/1 or 2/1.....	15
14b.	Incisors not 1/1 or 2/1.....	16
15a (14a).	Pinnae longer than tail; incisors 2/1	LAGOMORPHA (p.144)
15b.	Pinnae usually shorter than tail; incisors 1/1	RODENTIA (p.148)
16a (14b).	Digits largely syndactylous, with nails present on most; upper incisor tusk-like, no canines.....	HYRACOIDEA (p.266)
16b.	Digits not syndactylous, with claws or hooves (nails rarely present); upper incisors absent or, if present, not tusk-like; canines present or absent.....	17
17a (16b).	Foot posture plantigrade or digitigrade; digits with claws; canines larger than other teeth or indistinct; cheekteeth tritubercular, quadritubercular, bunodont, or secodont	18
17b.	Foot posture digitigrade or unguligrade; digits with nails or hooves; canines absent, small, or large, triangular and tusk-like; cheekteeth bunodont, selenodont, or lophodont.....	19
18a (17a).	Zygomatic arch present; auditory bulla present; canines prominent, conical, long; cheekteeth secodont or bunodont, never tritubercular or quadritubercular	CARNIVORA (p.208)
18b.	Zygomatic arch present or absent; auditory bulla present or absent; canines usually indistinct (if large, canines not conical); cheekteeth tritubercular or quadritubercular	INSECTIVORA (p. 59)

- 19a (17b). Femur with a prominent third trochanter (Fig. 10A); nasal broadened posteriorly; alisphenoid canal present; crown patterns of upper premolars and molars similar..... **PERISSODACTYLA** (p.269)
- 19b. No third trochanter on femur (Fig. 10B); nasal usually not broadened posteriorly; no alisphenoid canal; crown pattern of upper molars more complex than that of premolars..... **ARTIODACTYLA** (p.276)

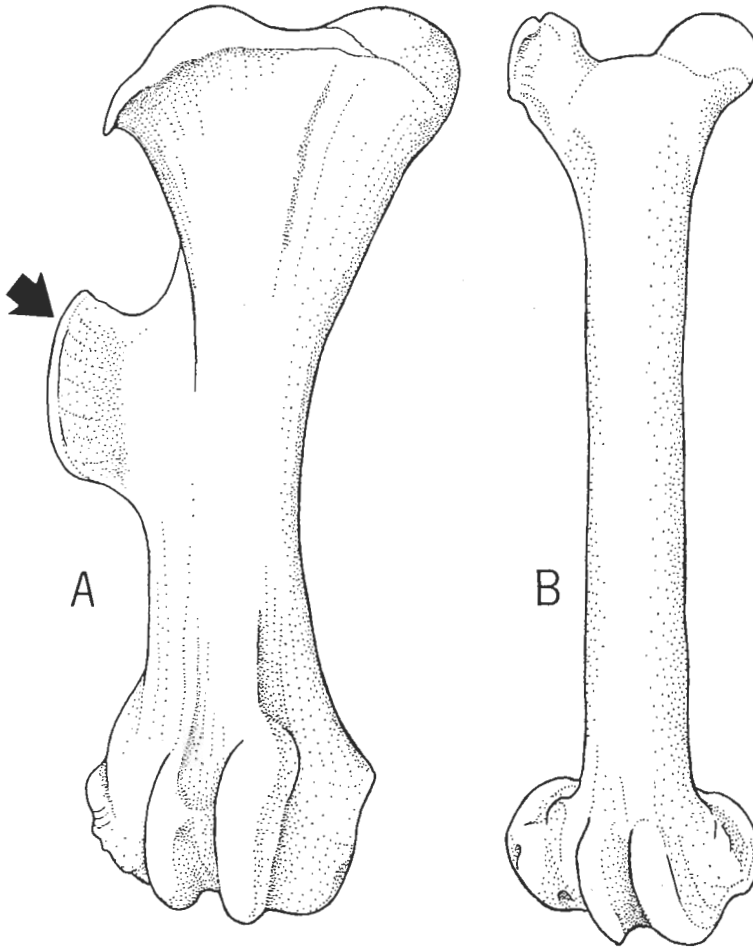


Figure 10. Presence (at arrow), in a perissodactyla (A), and absence, in an artiodactyl (B), of a third trochanter on the femur.