

Mammal Skulls

Mammals are divided into three groups. Note all mammals feed their young with milk.

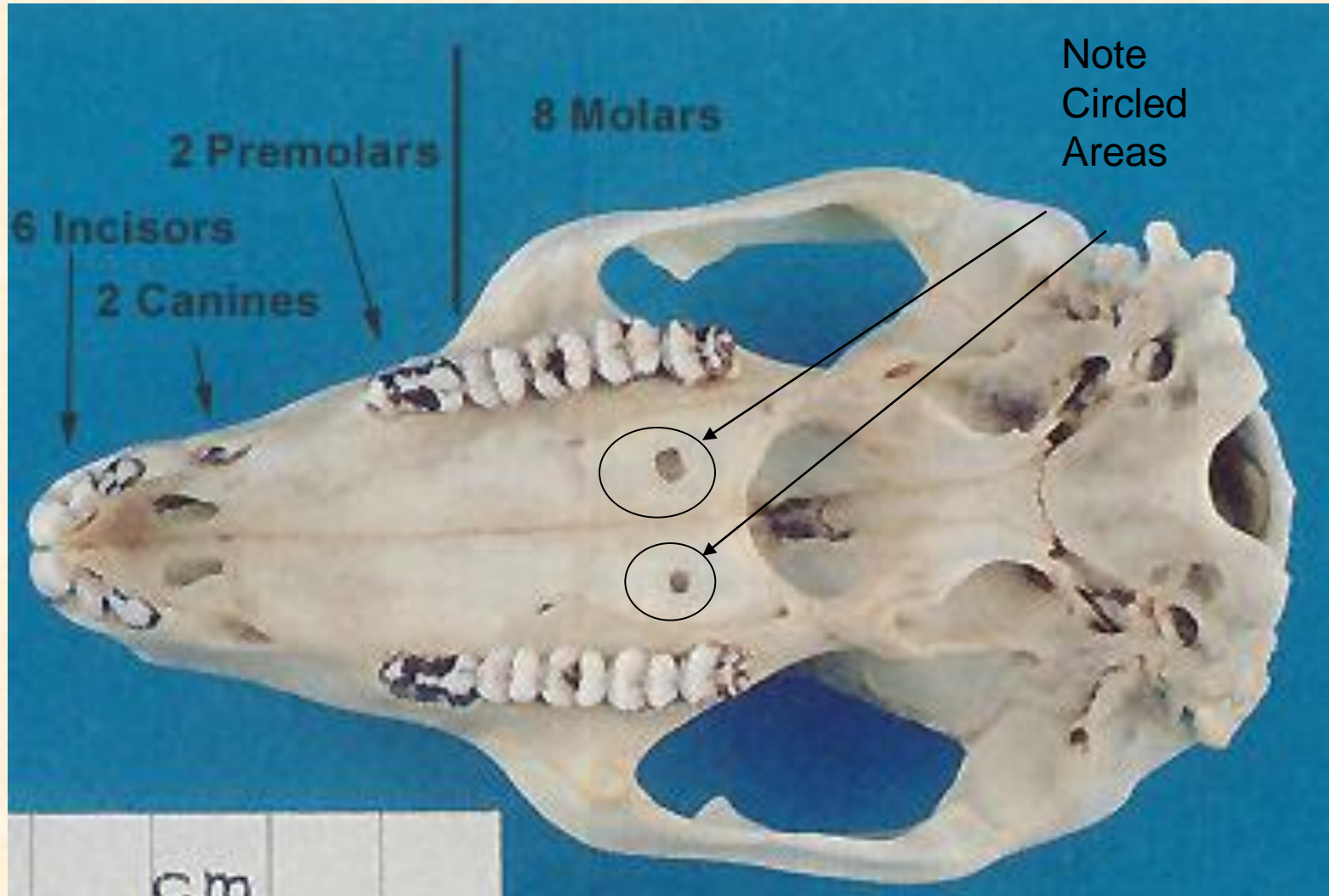
1. Placental mammals – Give birth to live young after spending an extended period in the uterus (womb). Examples, humans, dogs, cats, bears, lions, pigs, cows, sheep, bats.
2. Marsupials – Give birth to live young in a very undeveloped state. Further development then occurs in a pouch. Examples, kangaroos, koalas, wombats, possums, tasmanian devils, quolls.
3. Monotremes – Mammals that lay eggs. Examples, echidna, platypus

Animal Skulls

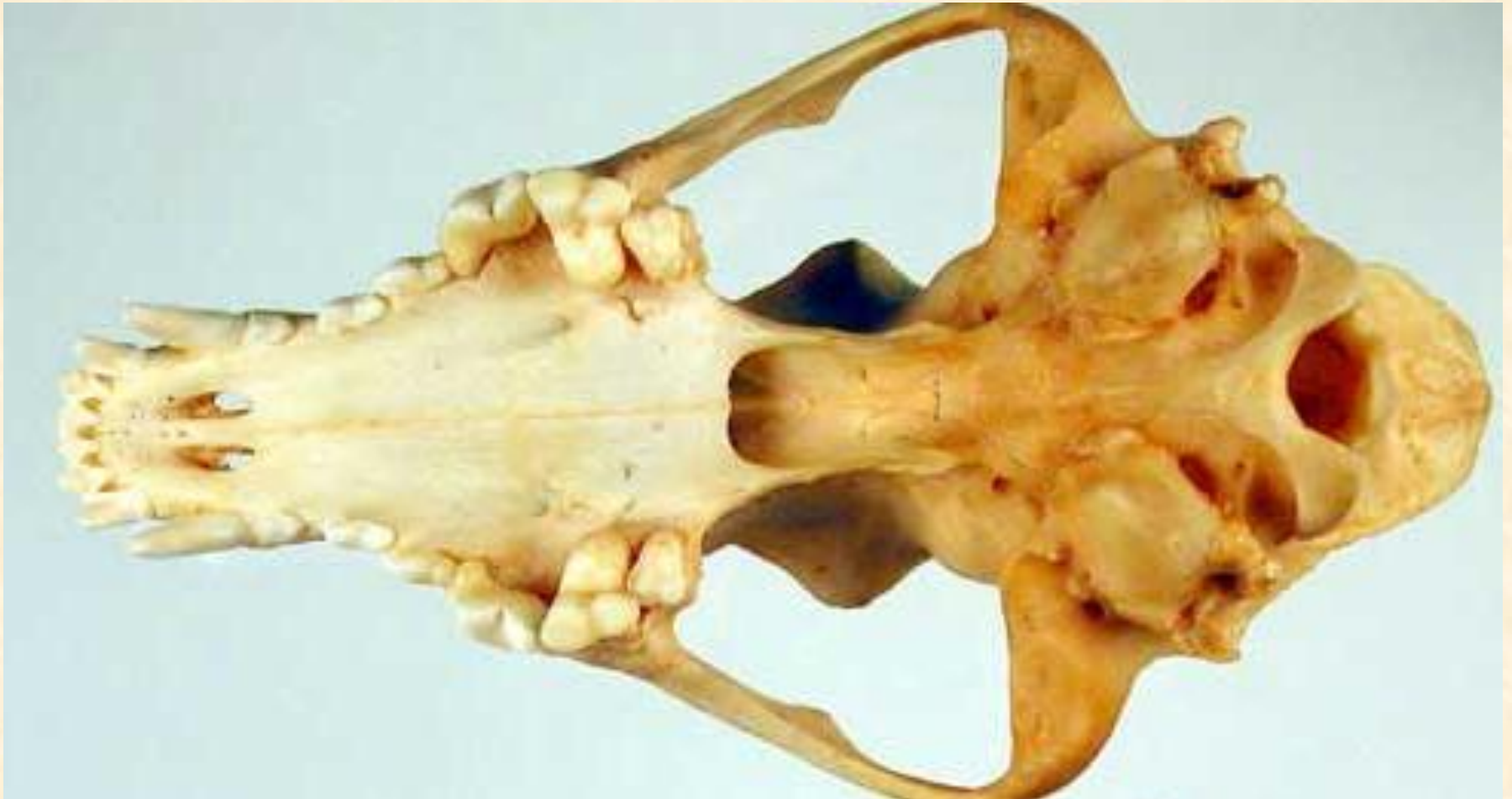
Animal skulls can tell a lot about the animal it came from. If it is a mammal, it is usually quite easy to determine whether it is from a placental mammal or a marsupial. Marsupials tend to have....

1. Incomplete ossification of the upper palate when compared to placentals.
2. Nasal bones that are broader at the back when compared to placentals
3. Inwardly deflected shelf of bone in the lower jaw that is lacking in placentals.

Incomplete Ossification Of The Upper Palate of a Tree Kangaroo



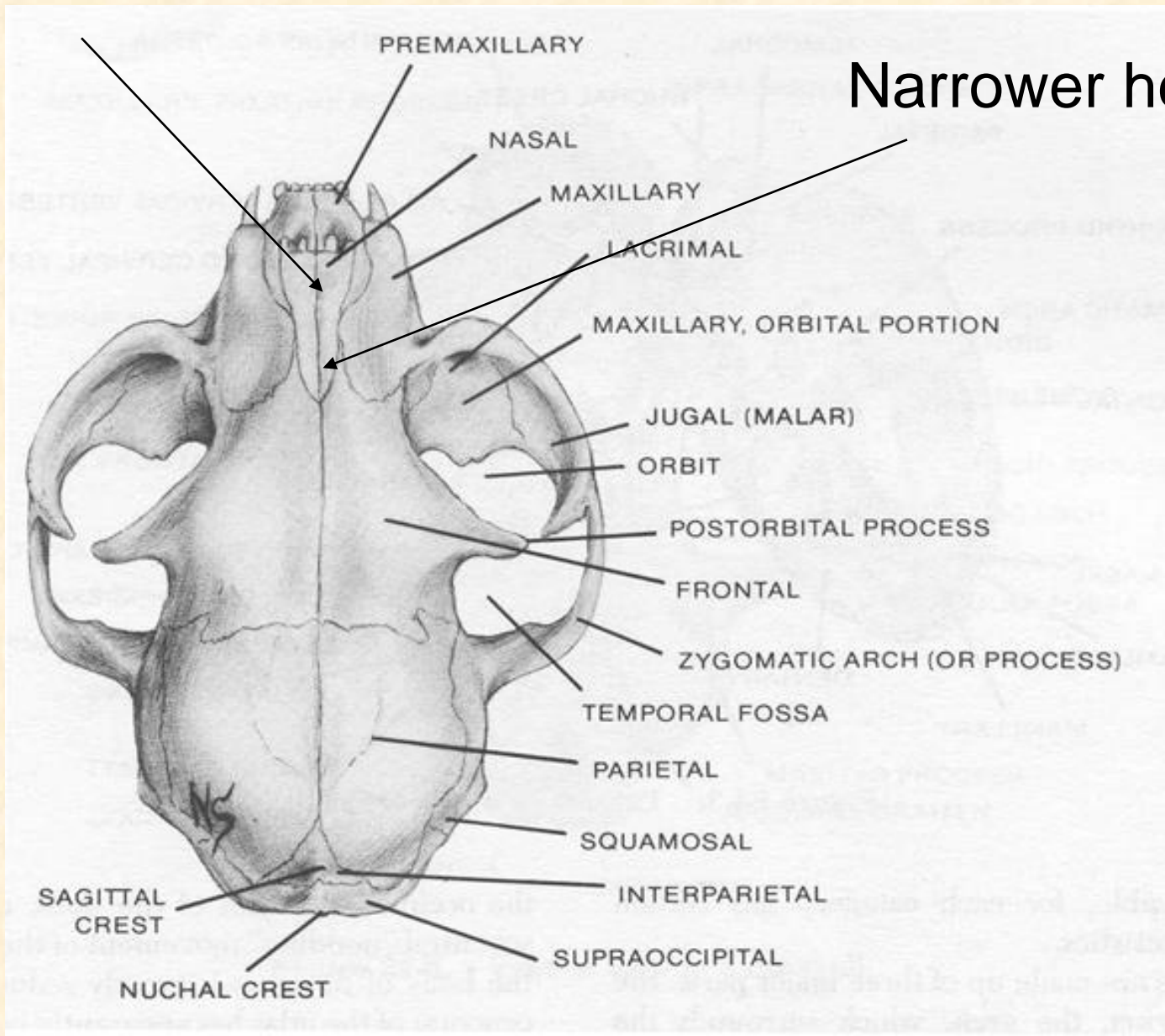
Placental Mammal (Dingo) shows
no such holes



Nasal Bones of Cat

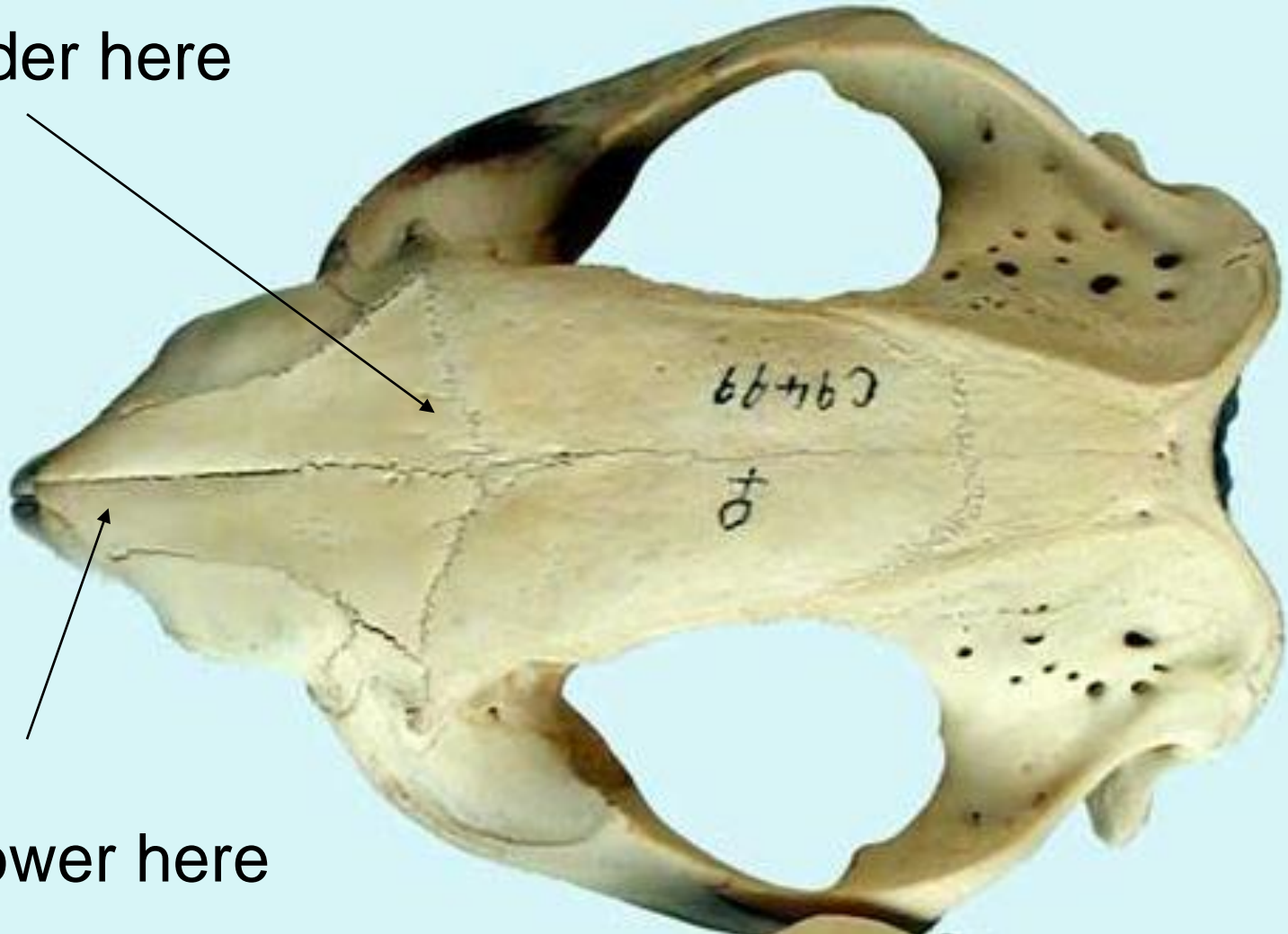
Broader here

Narrower here



Nasal Bones of Wombat

Broader here

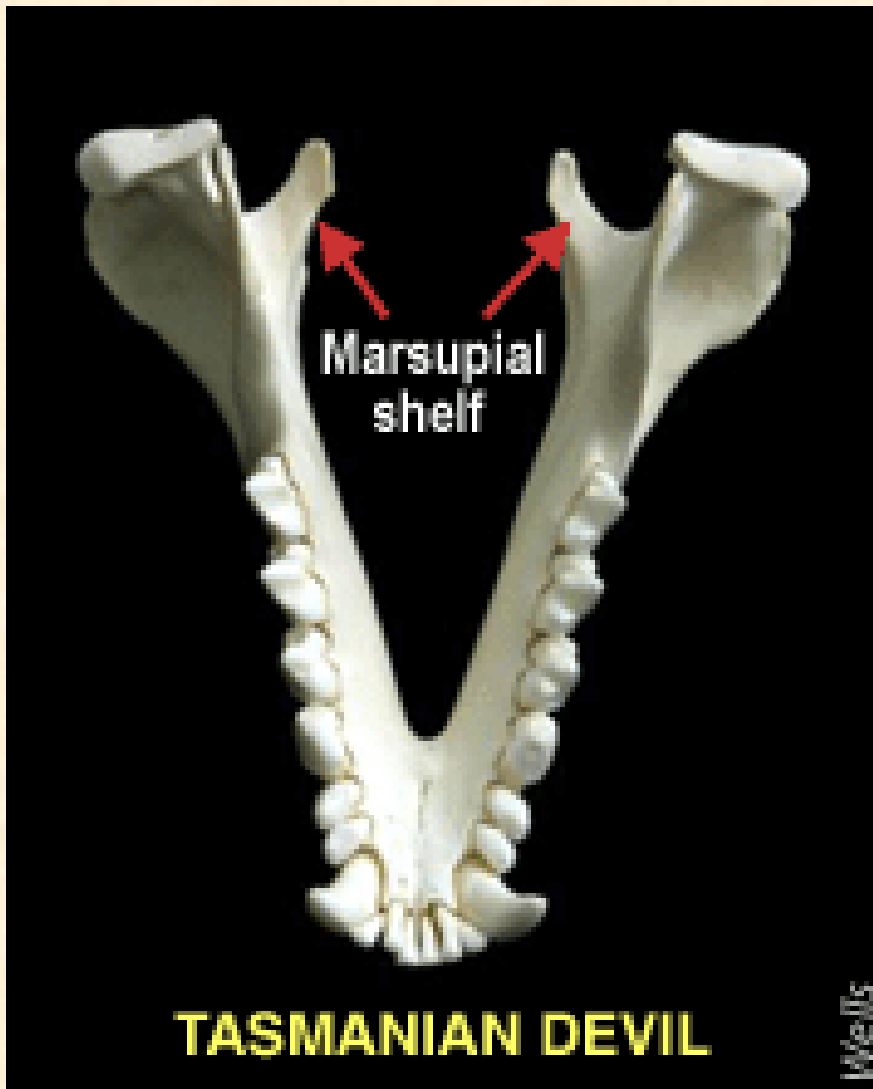


Narrower here

Lower Jaw

Marsupial

Dingo



Marsupial and Placental Mammals

Tasmanian Tiger



Wolf



Age of mammal can also be estimated by the teeth

- Young animals may still have teeth that are yet to erupt.
- Old animals will show greater wear to the teeth and may have lost several teeth.

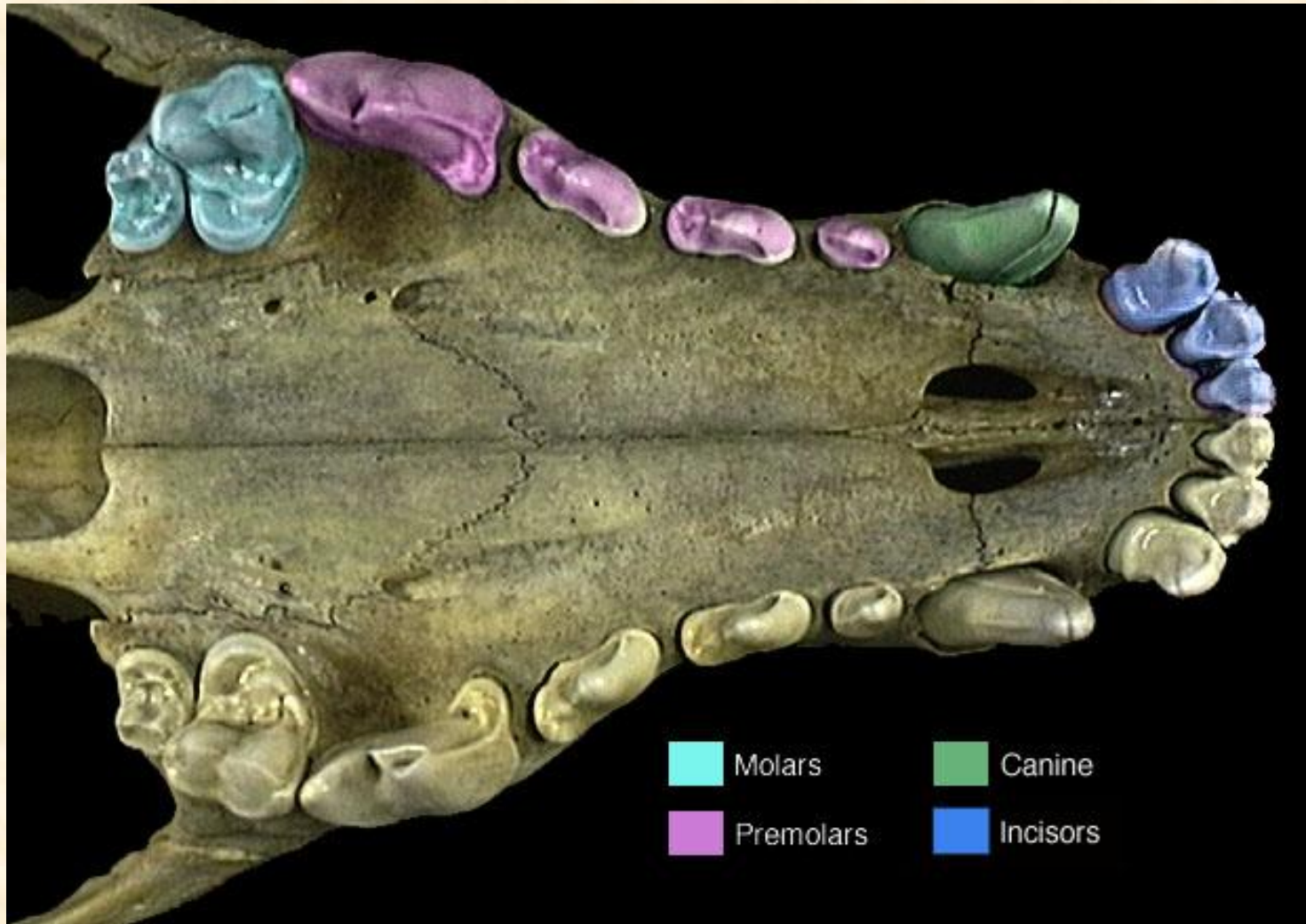
Grey Kangaroo

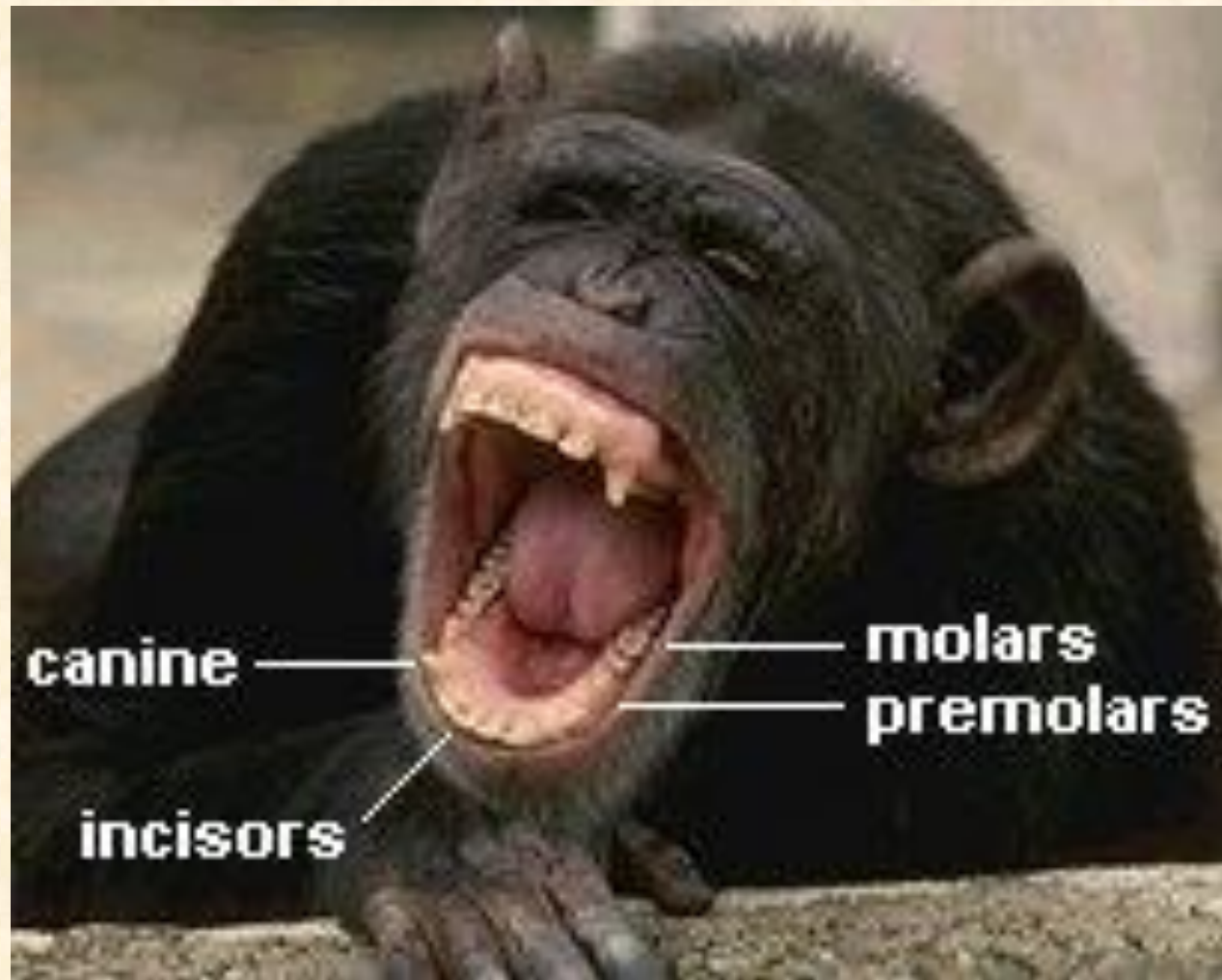


Older Kangaroo



Dental Formula (see worksheet)



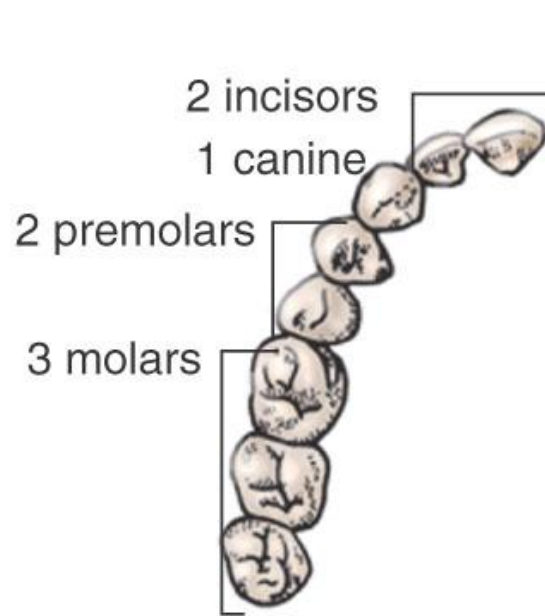


Dental Formula of a Cat

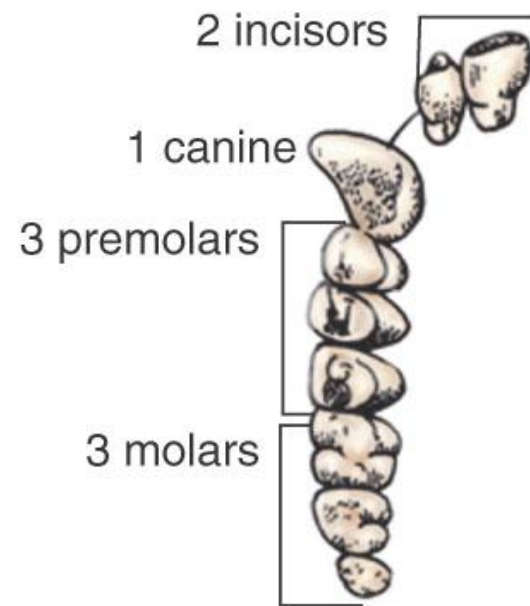
Deciduous $\frac{3 \ 1 \ 3}{3 \ 1 \ 2} = 13$

Permanent $\frac{3 \ 1 \ 3 \ 1}{3 \ 1 \ 2 \ 1} = 15$



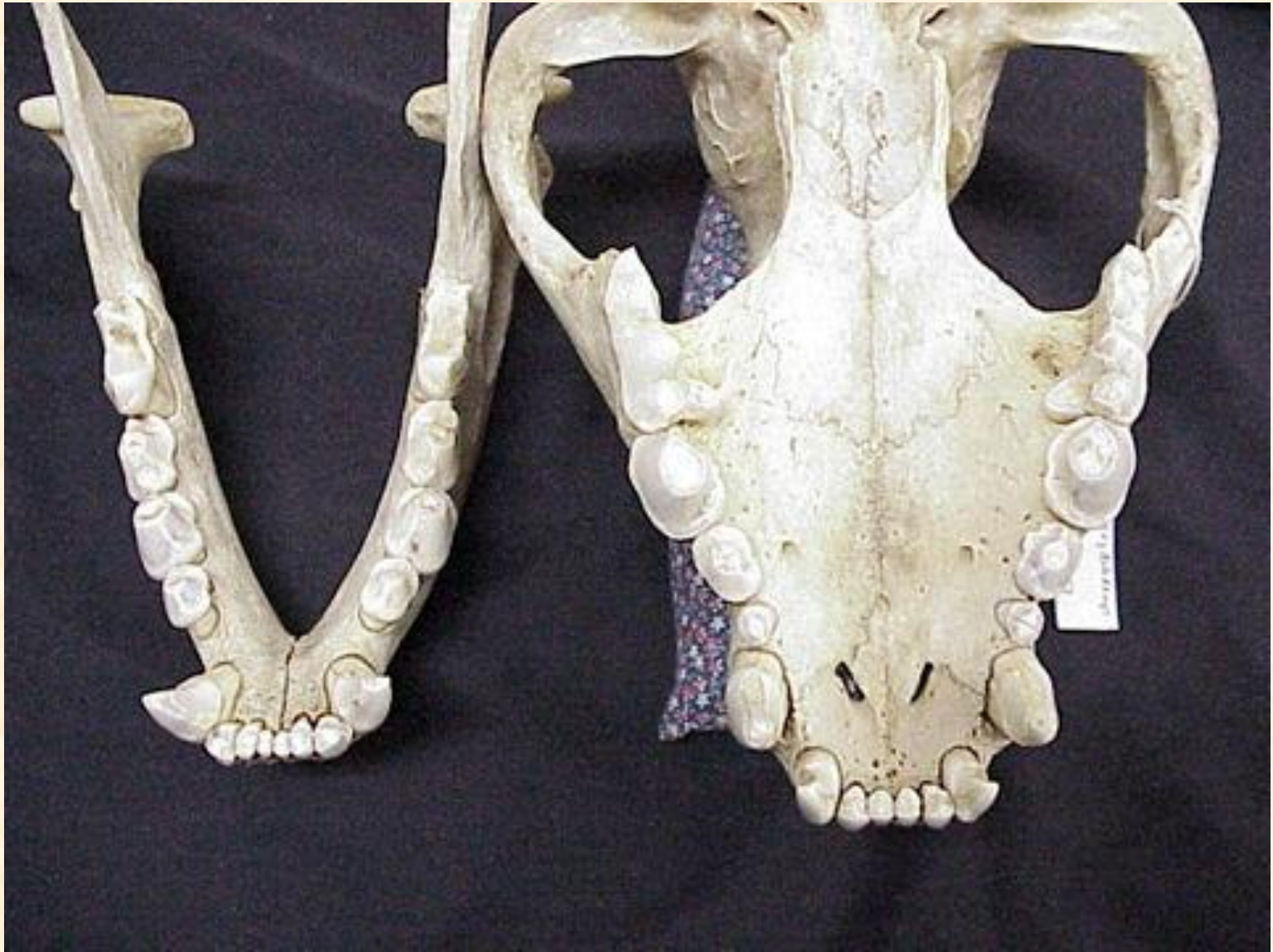


(a) Human: 2.1.2.3.



(b) New World monkey: 2.1.3.3.

This is a spotted hyaena. What is its dental formula?



Ans: I 3/3, C 1/1, P 4/3, M 0/1.

Note: Premolars have deciduous and adult forms, whereas there are no milk molars, only permanent adult teeth.

Premolars are usually more simple than molars, they are smaller and have fewer cusps and roots.

However, there are cases when it is difficult to tell premolars from molars, and in this case we call them cheek teeth, collectively.