

# Bone Identification Workshop 25/2/12



## Human or Animal?? Cranium

### Human

Large bulbous vault, small face  
Vault relatively smooth  
Inferior Foramen Magnum  
Chin present  
Orbits at front, above nasal aperture  
Minimal nasal and midface projection  
"U"-shaped mandible (no midline separation)

### Animal

Small vault, large face  
Pronounced muscle markings, sagittal crest inferior  
Posterior Foramen Magnum  
Chin absent  
Orbits at sides, posterior to nasal aperture  
Significant nasal and midface projection  
"V"-shaped mandible (separates at midline)



# Teeth

## Human

Omnivorous

Dental formula 2:1:2:3

Incisors (maxillary) are larger than other mammals

Canines small

Premolars and molars have low, rounded cusps divided by distinct grooves

## Animal

Carnivorous; Herbivorous; Omnivorous

Basic dental formula 3:1:4:3

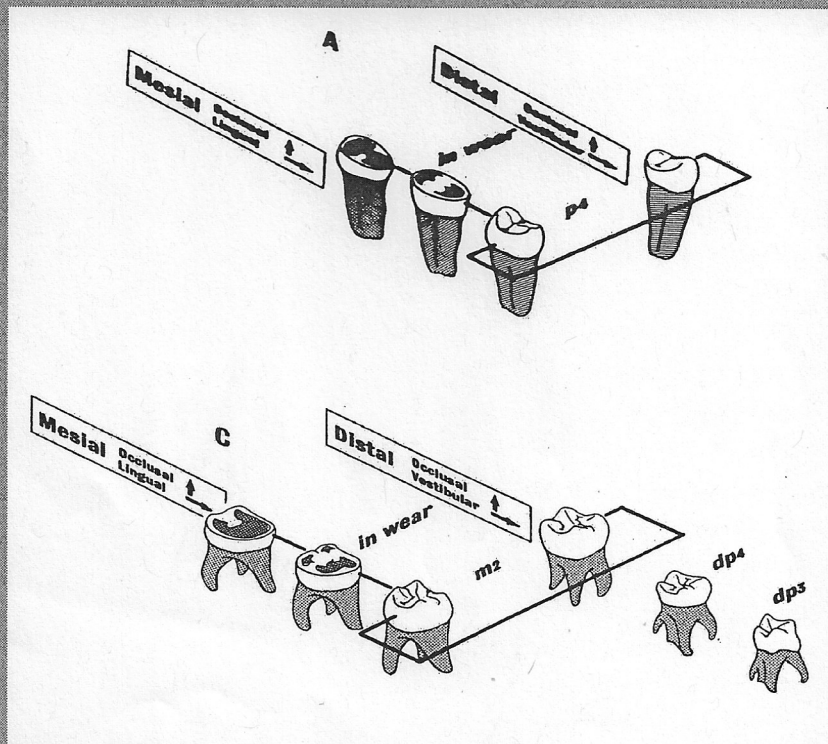
Horse maxillary incisors are larger than human incisors

Carnivores have large conical canines; Herbivores have small or missing canines

Carnivores have sharp, pointed cheek teeth; Herbivores have broad, flat cheek teeth with parallel furrows and ridges

24/02/12

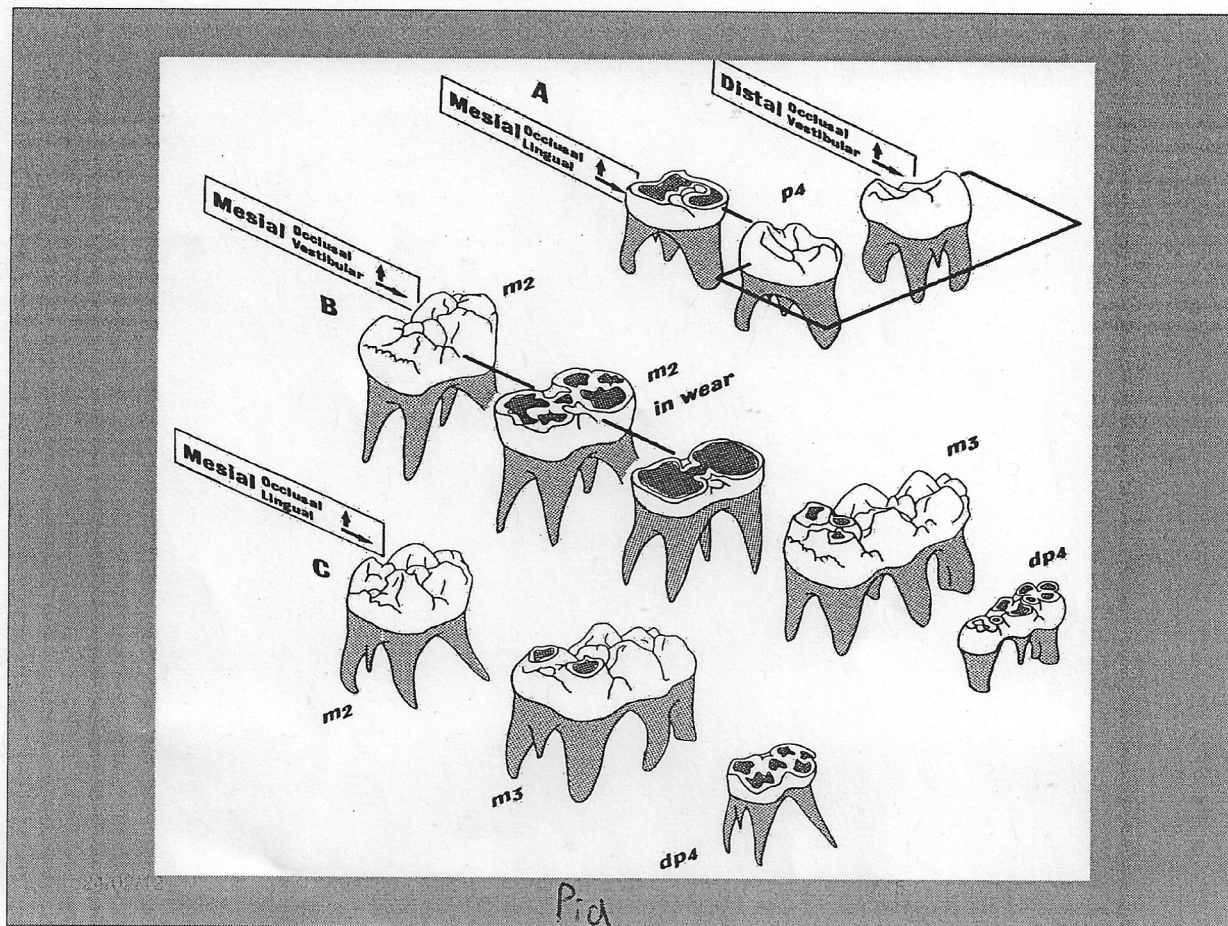
3



24/02/12

Human





## Post-Cranium

### Human

Upper limbs less robust

Radius and ulna are separate bones

Large, flat and broad vertebral bodies with short spinous processes

Sacrum with 5 fused vertebrae, short and broad

Pelvis is broad and short, bowl-shaped

Femur is longest bone in body, linea aspera is singular feature

Separate tibia and fibula

Foot is long and narrow, weight borne on heel and toes

### Animal

Robust upper limbs

Radius and ulna often fused

Small vertebral bodies with convex/concave surfaces and long spinous processes

Sacrum with 3 or 4 fused vertebrae, long and narrow

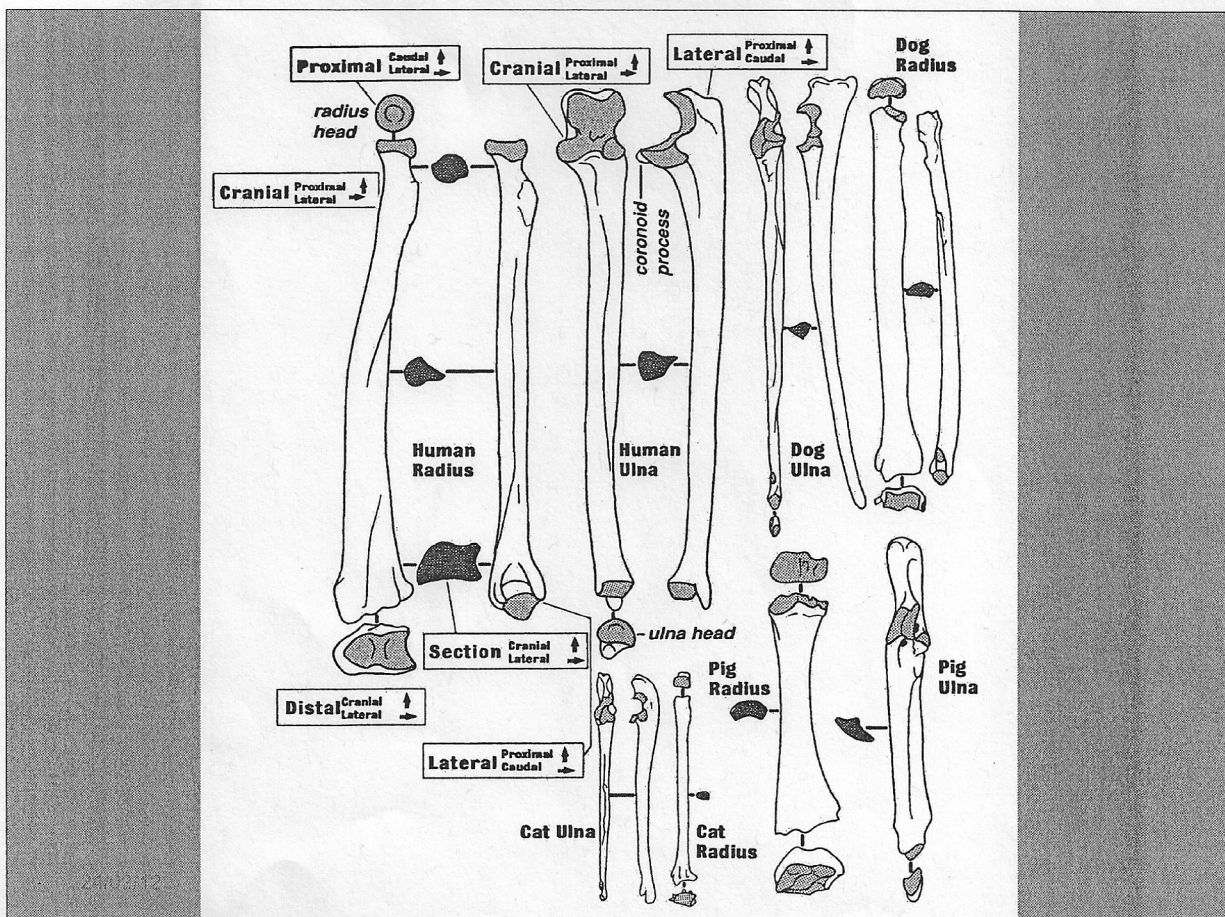
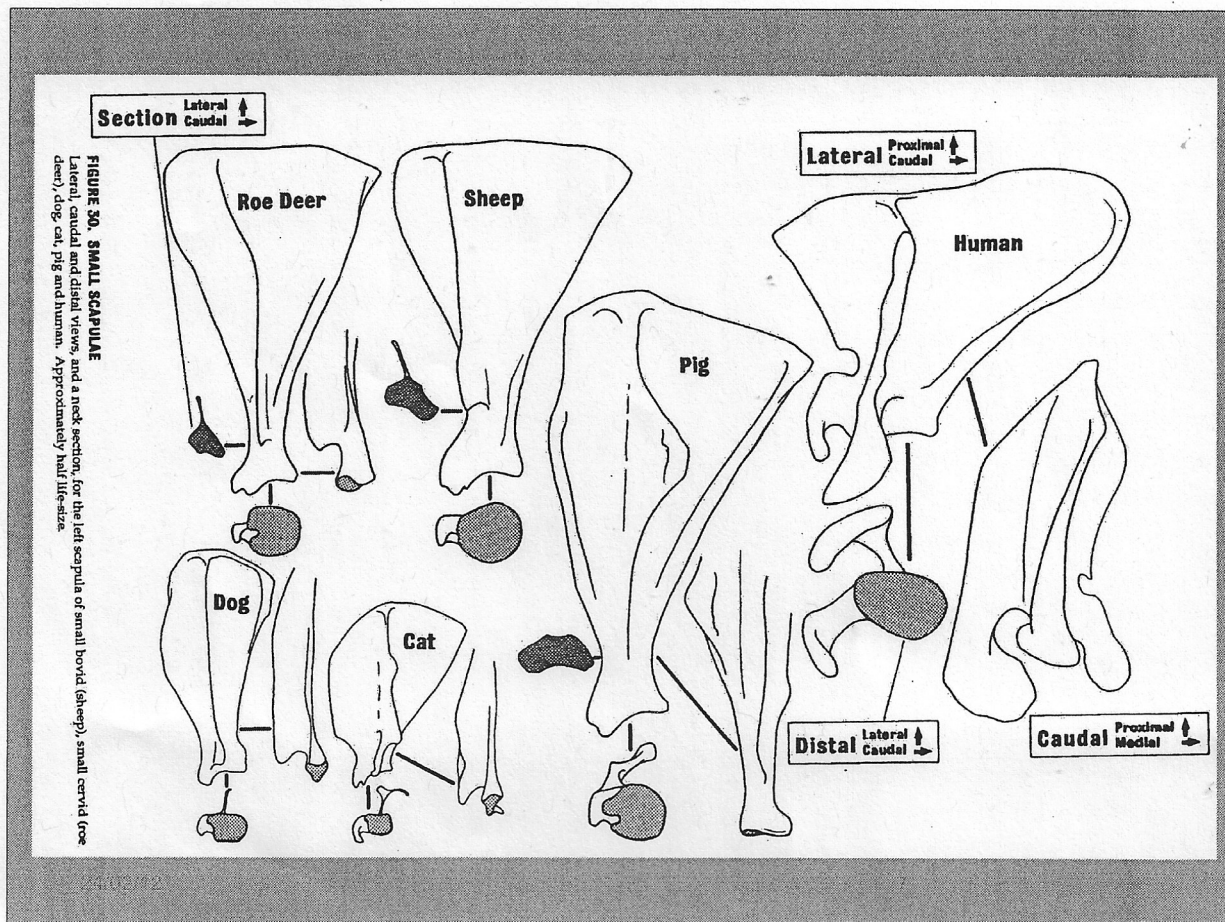
Pelvis is long and narrow, blade-shaped

Femur is similar length to other limb bones, linea aspera double or plateau

Tibia and fibula are often fused

Foot is broad, weight borne mainly on toes





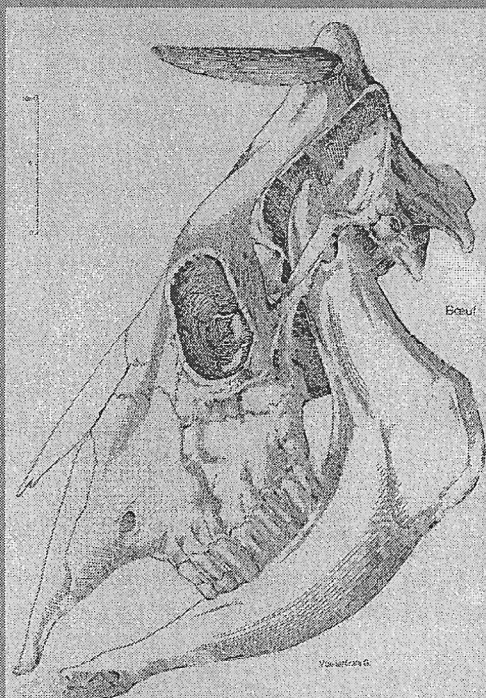


# Domestic Mammals

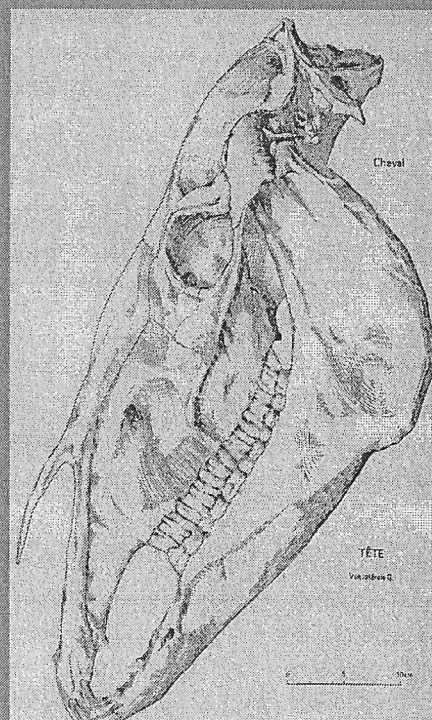
- Don't go by size!!!!
- Look for diagnostic features (usually ends)
- Comparative collections

24/1/12

## Cattle



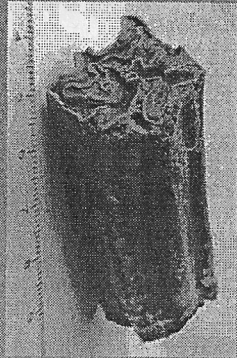
## Horse





## Cattle vs. Horse

- Teeth easy to distinguish



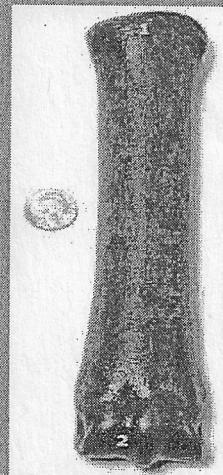
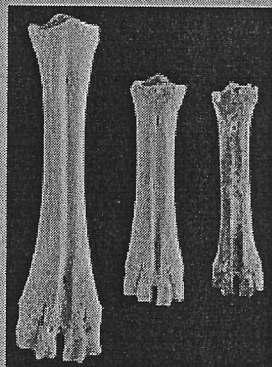
Horse



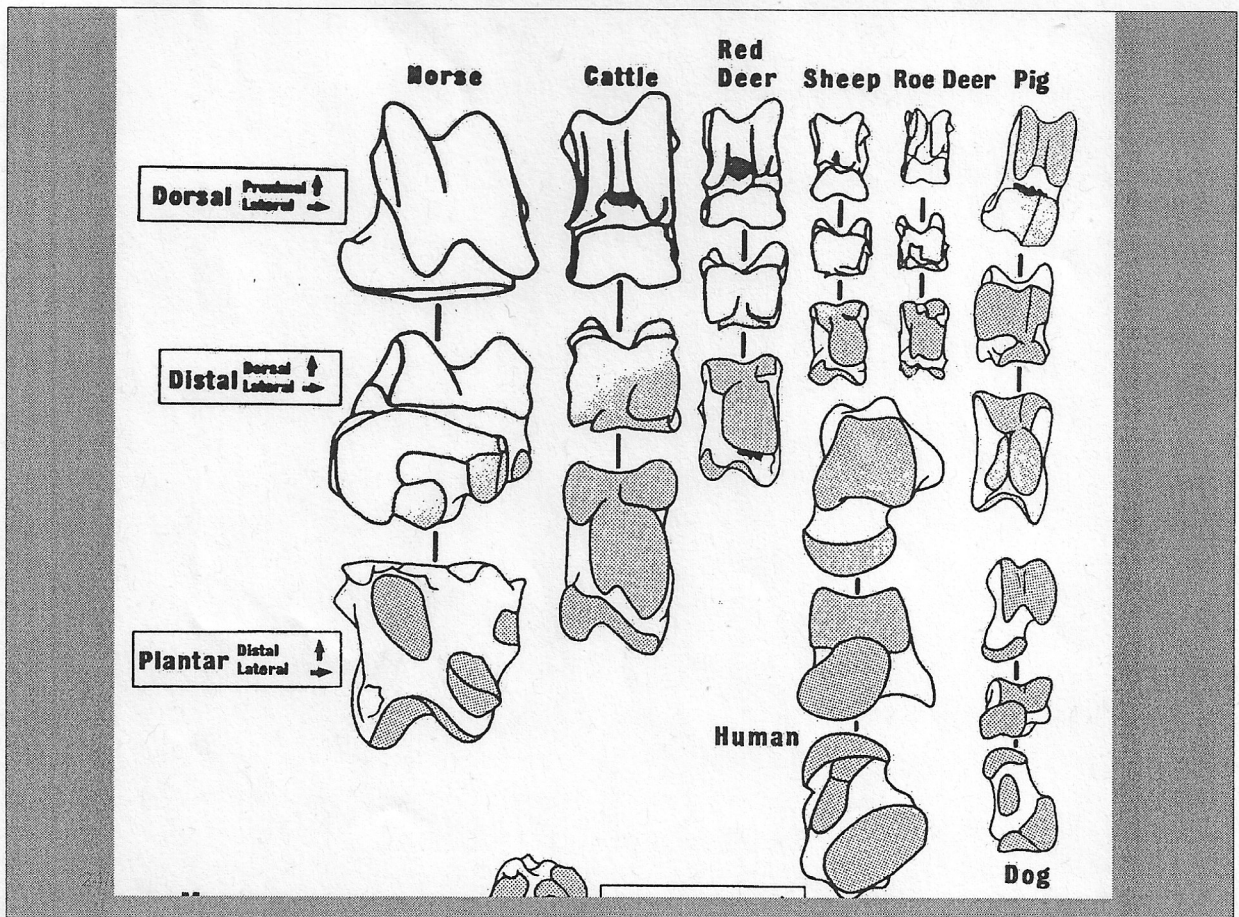
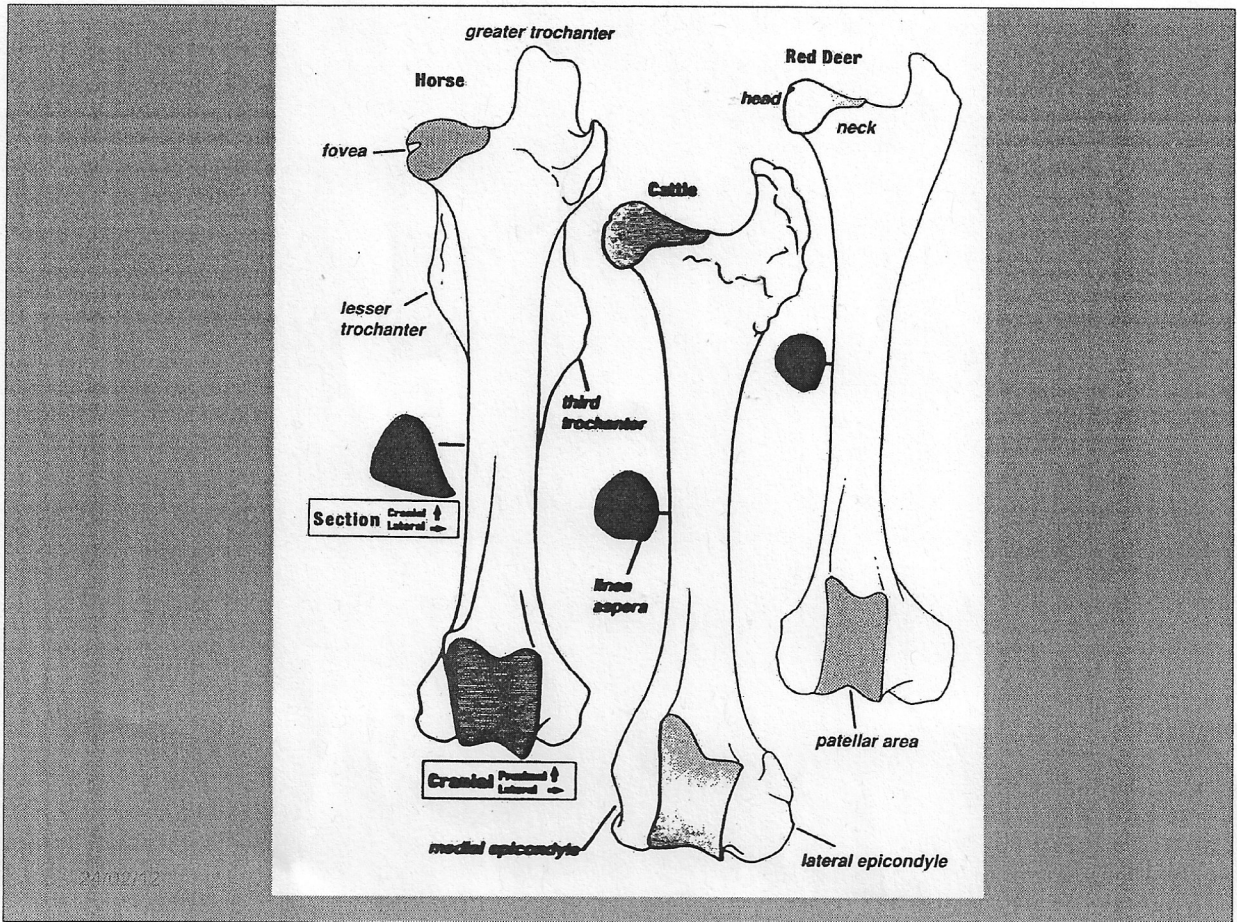
Cattle

## Cattle vs. Horse

- Lower limbs/phalanges also easy







Astragali



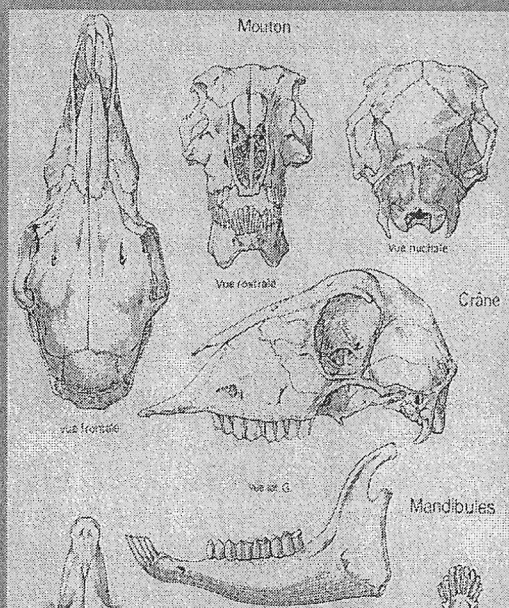
## Cattle vs. Horse

- Horse long bone ends tend to have more/larger muscle attachments (especially hind limbs).
- Horse pelvis flares out next to the acetabulum.
- Astragalus is completely different to other domestic mammals.

24/02/12

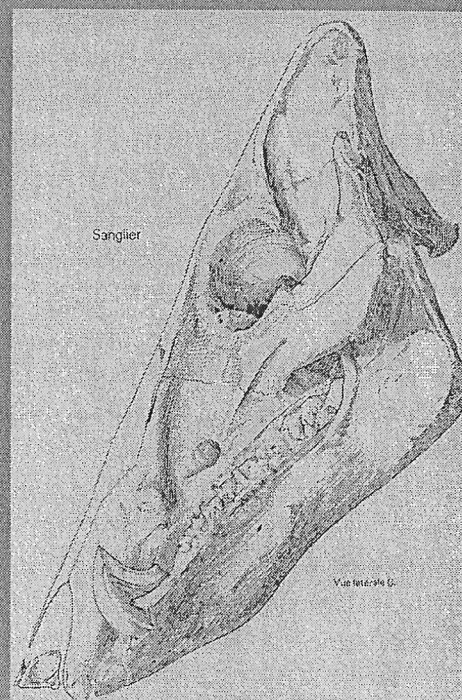
3

## Sheep



24/02/12

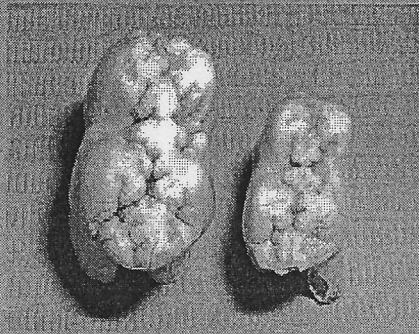
## Pig



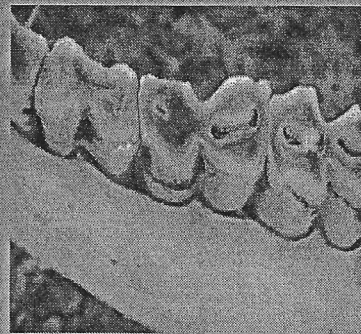


## Sheep/Goat vs. Pig

- Teeth easy to distinguish
- Long bones harder apart from metapodia



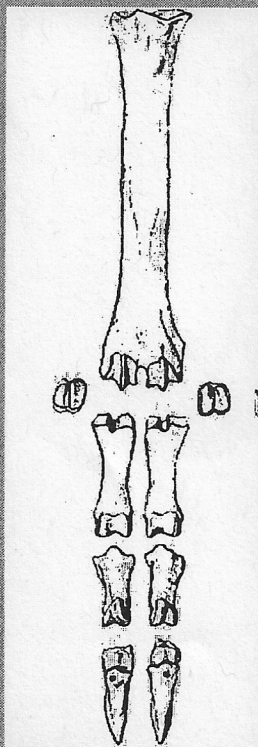
Pig



Sheep

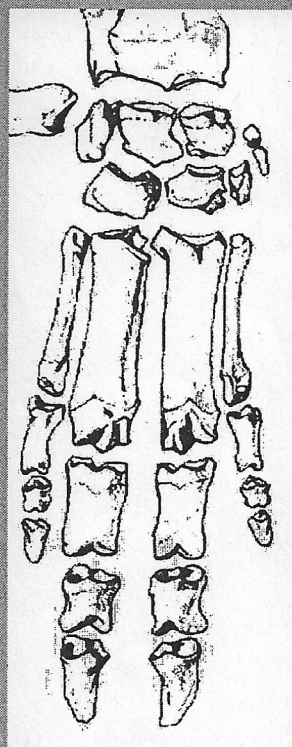
24/02/12

### Sheep

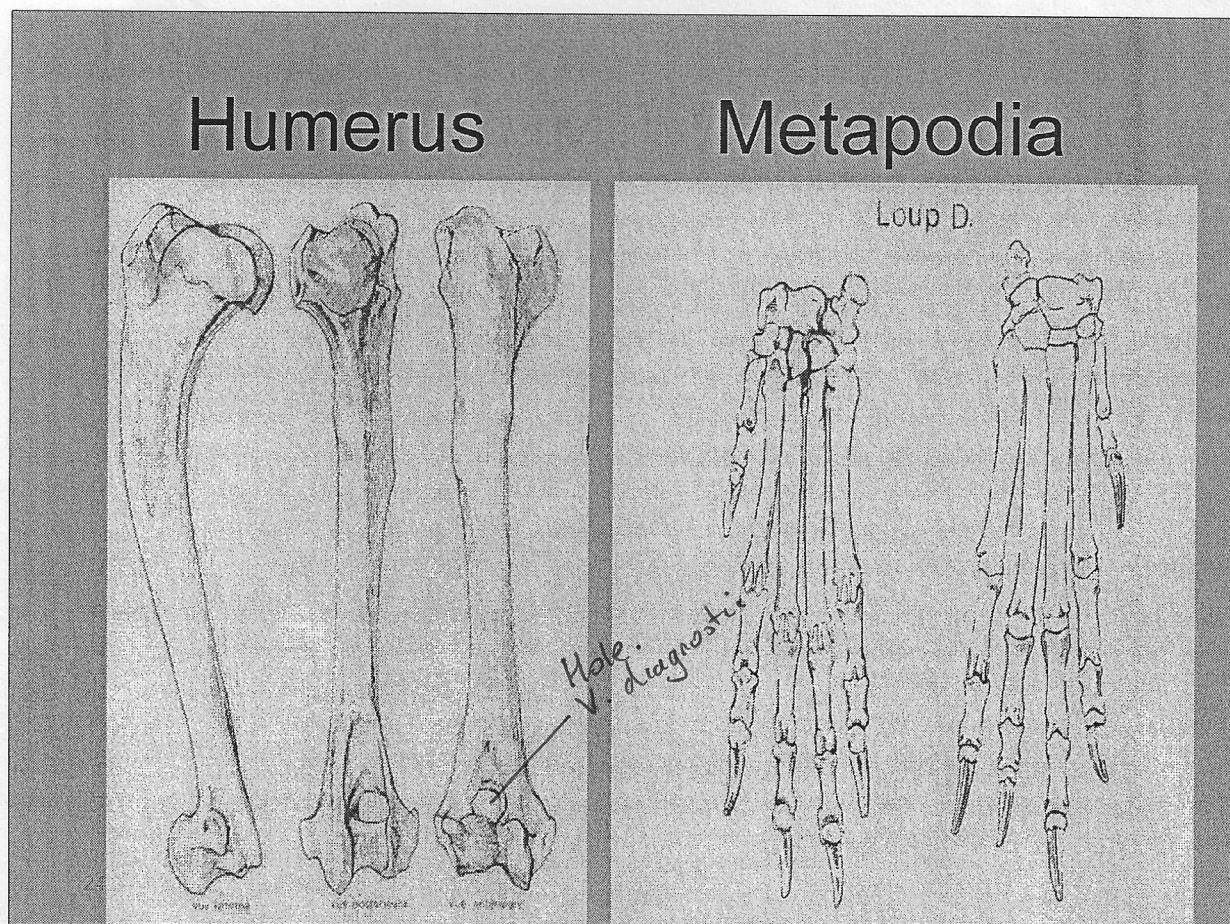
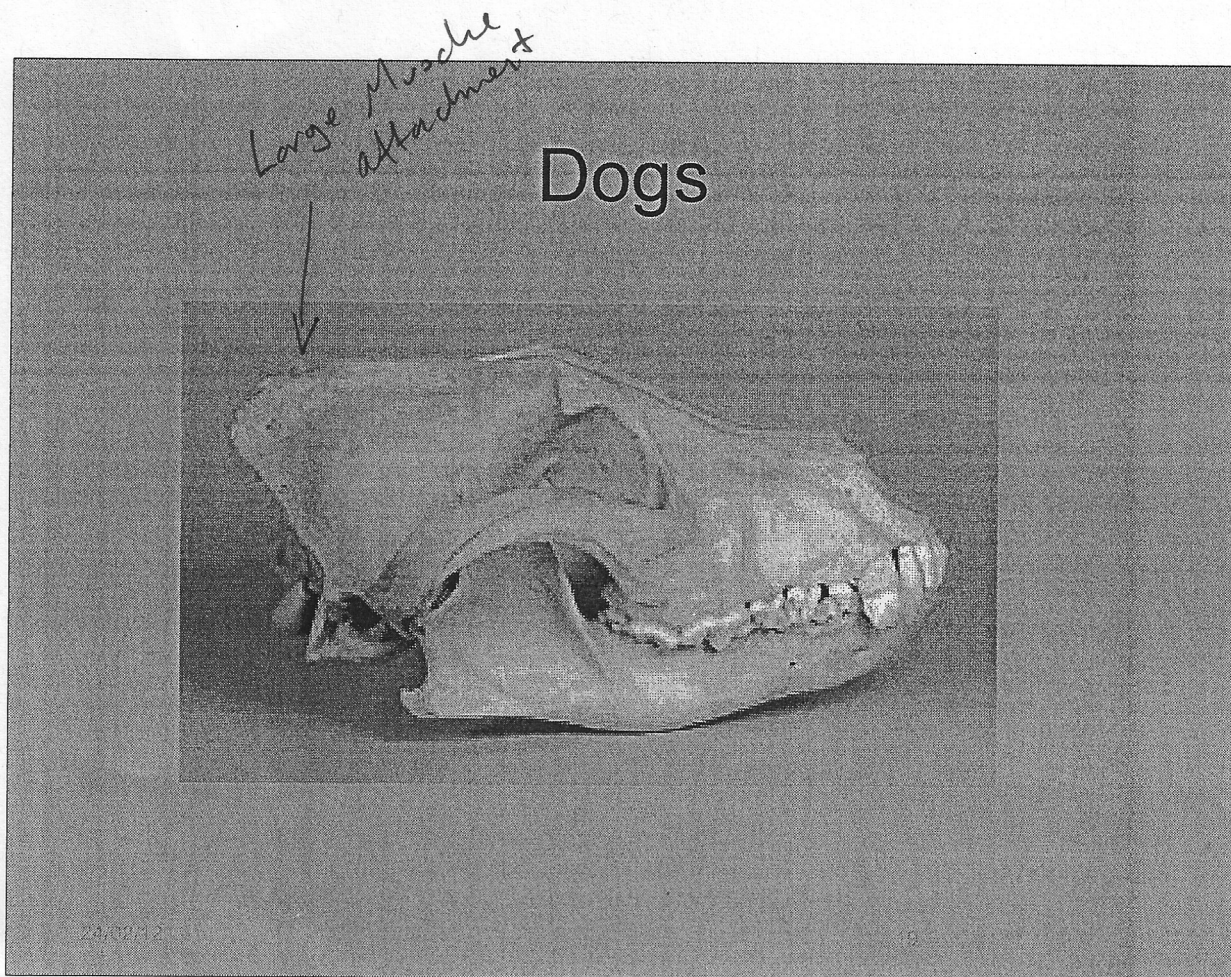


24/02/12

### Pig

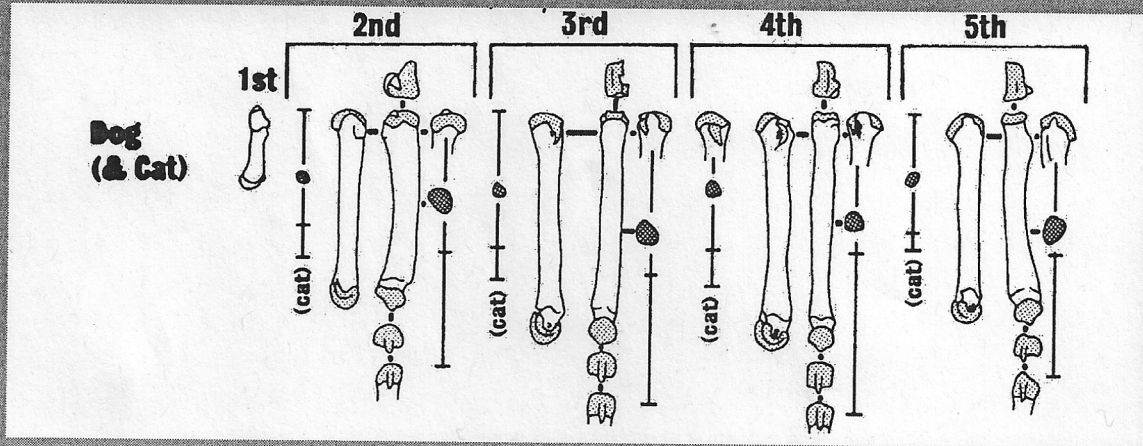






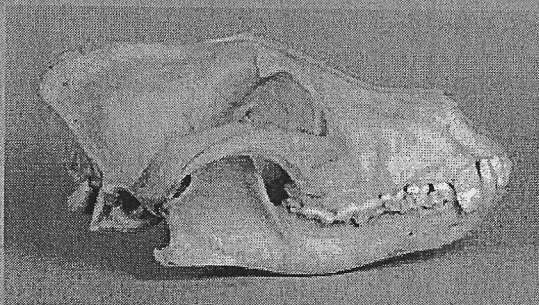


## Dog vs Cat (Metapodia)



24/02/12

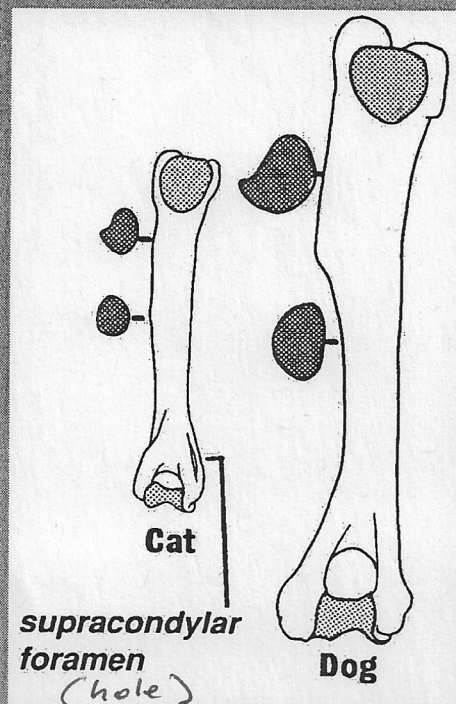
## Dogs vs Cats



24/02/12



## Dog vs Cat (Humerus)



## Useful Books

- Hillson, S. (2003) *Mammal Bones & Teeth* ISBN 9780905853307
- Pales, C & L. Lambert. (1971). *Atlas Osteologique pour servir a l'identification des Mammiferes du Quaternaire.*
- Schmid, E. (1972) *Atlas of Animal Bones*
- White, T. (2000) *Human Osteology*
- Cohen, A & D. Serjeantson (1991) *Manual for the Identification of Bird Bones from Archaeological sites.*