

Field Documentation, collection & evaluation of human remains

PřF: Bi2424 Field research methods (Spring 2024)

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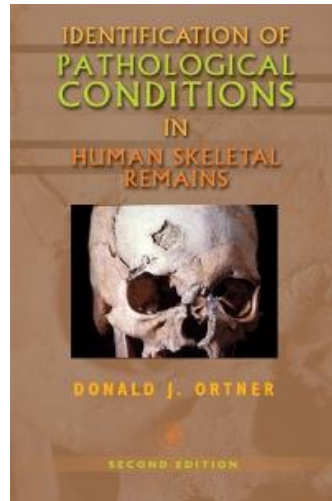


A record of our Lives

Anthropologists analyze skeletons of ancient populations to find out:

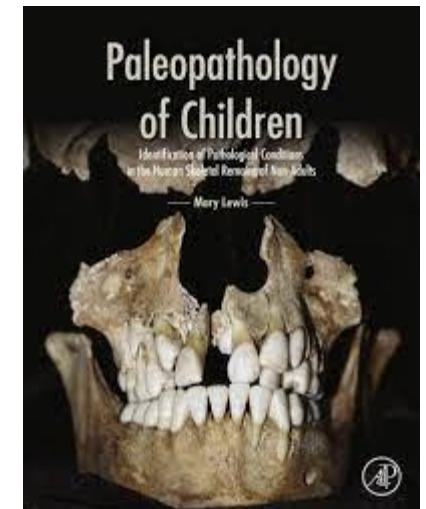
- **How** they were? Age at death, biological sex, height
- **Who** they might have been? Identity, origin
- **Where** did they go? Mobility, migration
- **What** they ate? Diet

A record of our Health



Palaeopathology is the medical discipline dedicated to the study of disease occurring in the past which, in many cases, still afflicts the present

Molecular paleopathology is an emerging field that is devoted to the detection, identification and characterization of the molecular signatures in past diseases



Anthropologist can also study:

- Diseases
- Activities
- Injuries/ surgeries
- Causes of death



RESEARCH ARTICLE | Open Access |

Medieval injuries: Skeletal trauma as an indicator of past living conditions and hazard risk in Cambridge, England

Jenna M. Dittmar Piers D. Mitchell, Craig Cessford, Sarah A. Inskip, John E. Robb

First published: 25 January 2021 | <https://doi.org/10.1002/ajpa.24225> | Citations: 3

> *Am J Phys Anthropol.* 2006 Jan;129(1):12-23. doi: 10.1002/ajpa.20234.

Tracing prehistoric activities: musculoskeletal stress marker analysis of a Stone-Age population on the island of Gotland in the Baltic sea

Petra Molnar ¹



King Tut was Disabled, Malarial, and Inbred



A case of trepanation (ancient cranial surgery)



You are not Indiana Jones

Your role is not to empty a hole, but much more than that...



myloviewr

Create a
story/dignity
of death

To excavate

To document

To analysis

To reconstruct

To store

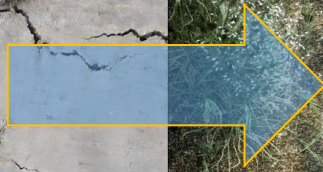
For this you need

Knowledge in:

1. Fields methods
2. Archaeoethanatology
3. Human osteology
4. Biological anthropology



And a lot of patience



I. Excavation

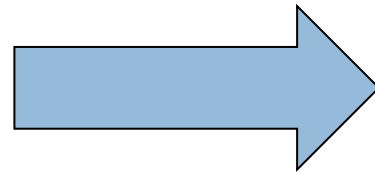
Use appropriate tools, (brushes & trowels) to carefully remove sediment and recover the remains, taking care to avoid damage



Excavate the whole of the grave **in plan**



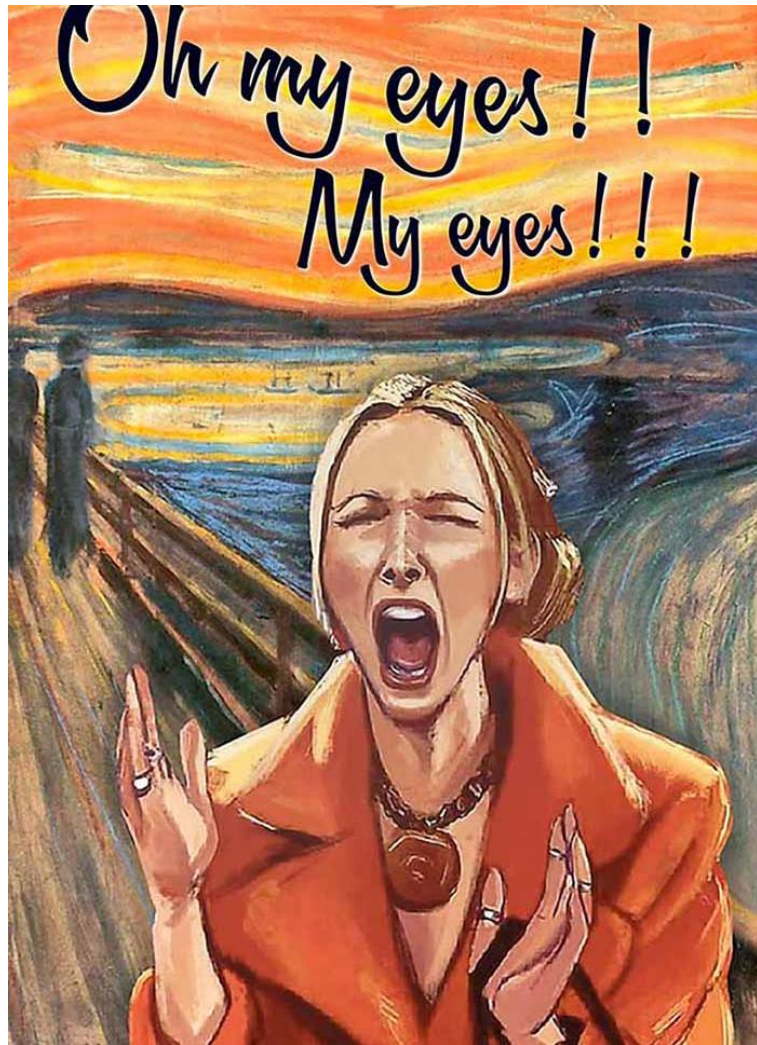
You are not



No shame of
having
'moved
bones' bag







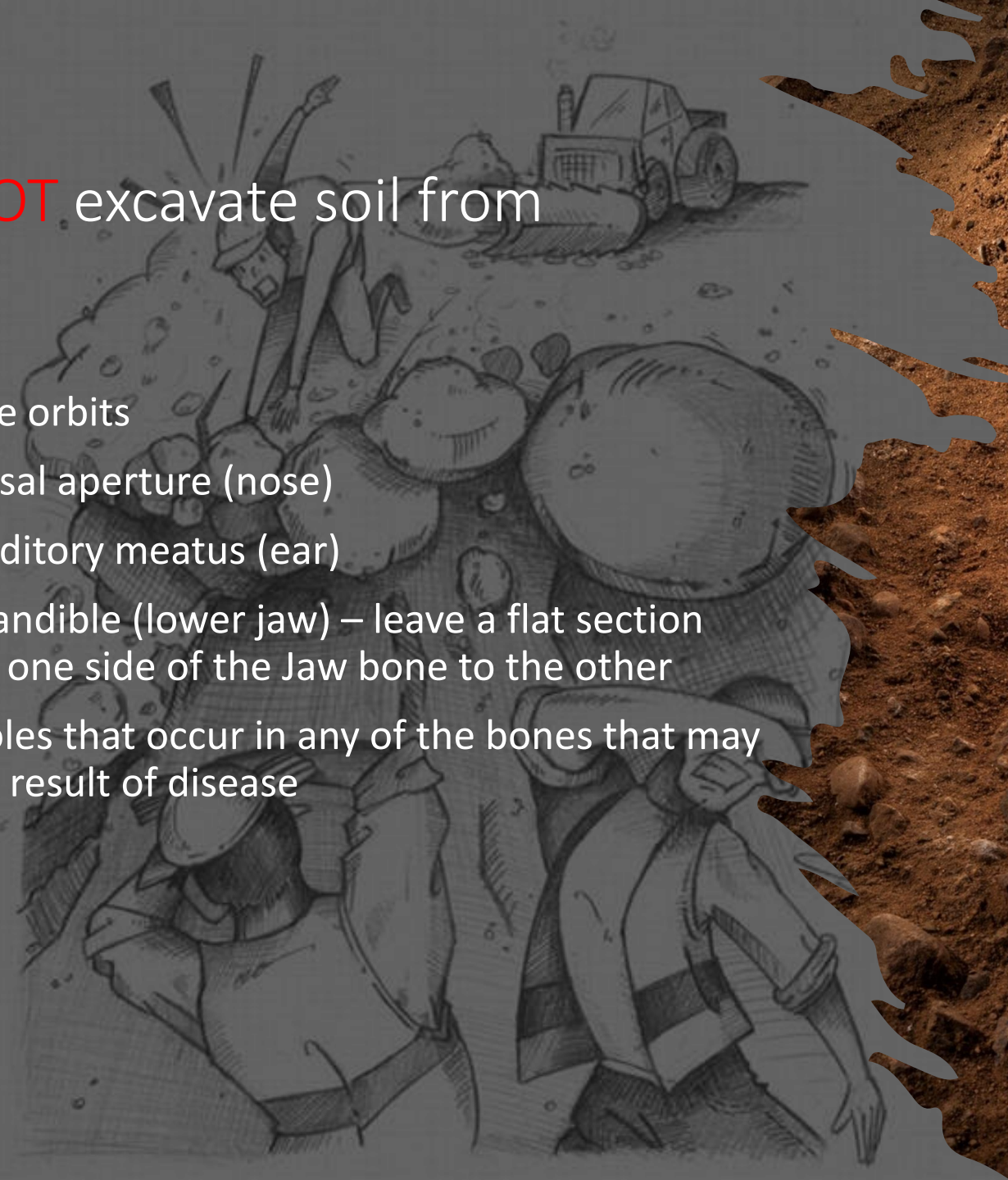
shutterstock.com · 1780117520



- Stick a trowel into the ground to pry out bone

DO NOT excavate soil from

- the eye orbits
- the nasal aperture (nose)
- the auditory meatus (ear)
- the mandible (lower jaw) – leave a flat section across one side of the Jaw bone to the other
- any holes that occur in any of the bones that may be the result of disease



Because you might lose tiny elements:

Hyoid Bone



Present in all people, contained within the jaw area in the throat.

Thyroid Cartilage



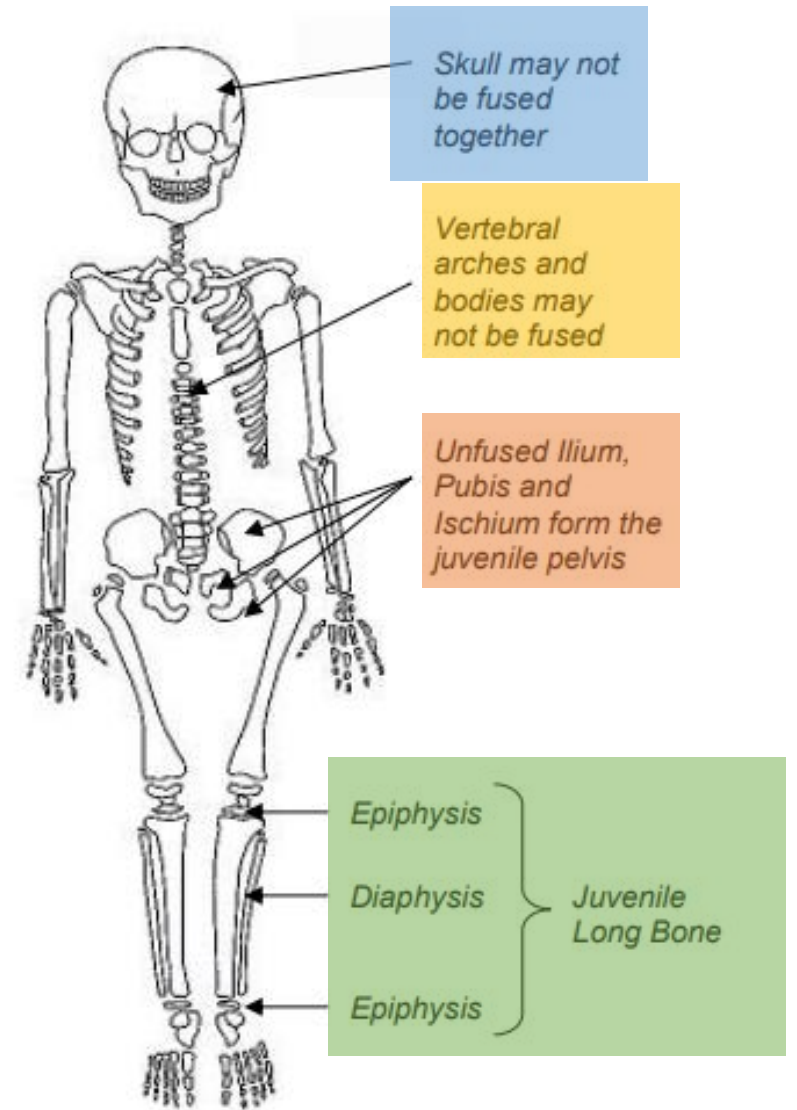
Present in some people, contained in the jaw area – very fragile ossified cartilage

Crickoid Cartilage



Present in a few people, contained in the jaw area – very fragile ossified cartilage

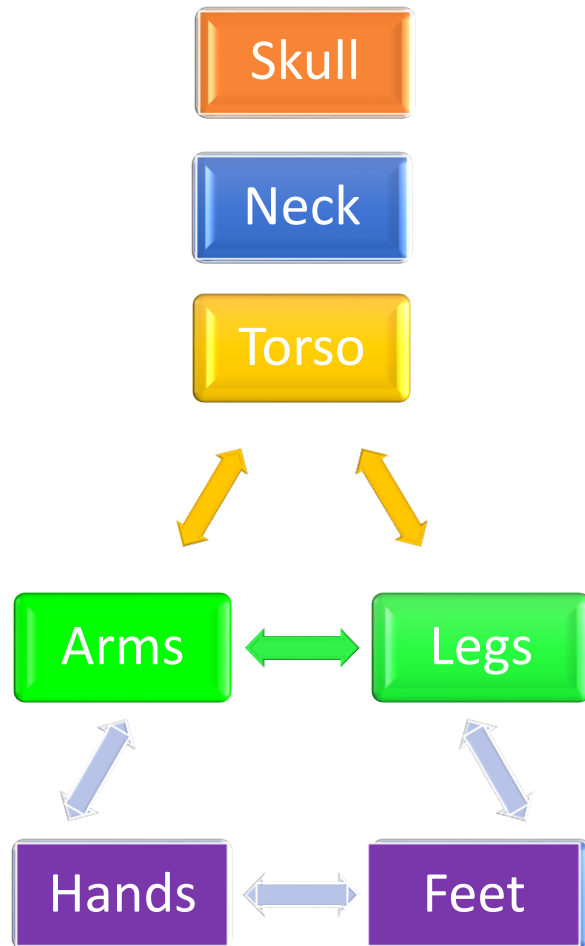
Subadults Skeleton – note unfused long bones and pelvis





Neonates should be block lifted

Once you have exposed the skull, you can work your way down the remains in sequential order of body areas:



- Remove as much soil as is required to reveal to extent of the bones (and associated finds) and their position in the ground so that can be clearly seen for recording and photographing
- Be careful not to remove so much fill that the bones move from their original position or to scrape the bone surface with your trowel



Post-mortem damage caused to the surface of a well preserved femur by using a mattock to excavate grave fill.



Careful excavation with appropriate tools ensured the survival of this fragile fragment of **shroud** preserved on the tibia of this individual.



At the stage when full extent of the skeleton has been fully exposed, record the skeleton. This should include:

- the bones present,
- body position,
- head position,
- grave alignment,
- associated finds,
- structures and features,





- Conduct an initial assessment of age-at-death estimation, sex determination, and stature estimation based on skeletal indicators.
- Identify any evident traumatic injuries, diseases, or other pathological conditions (closeup shots taken with a scale).

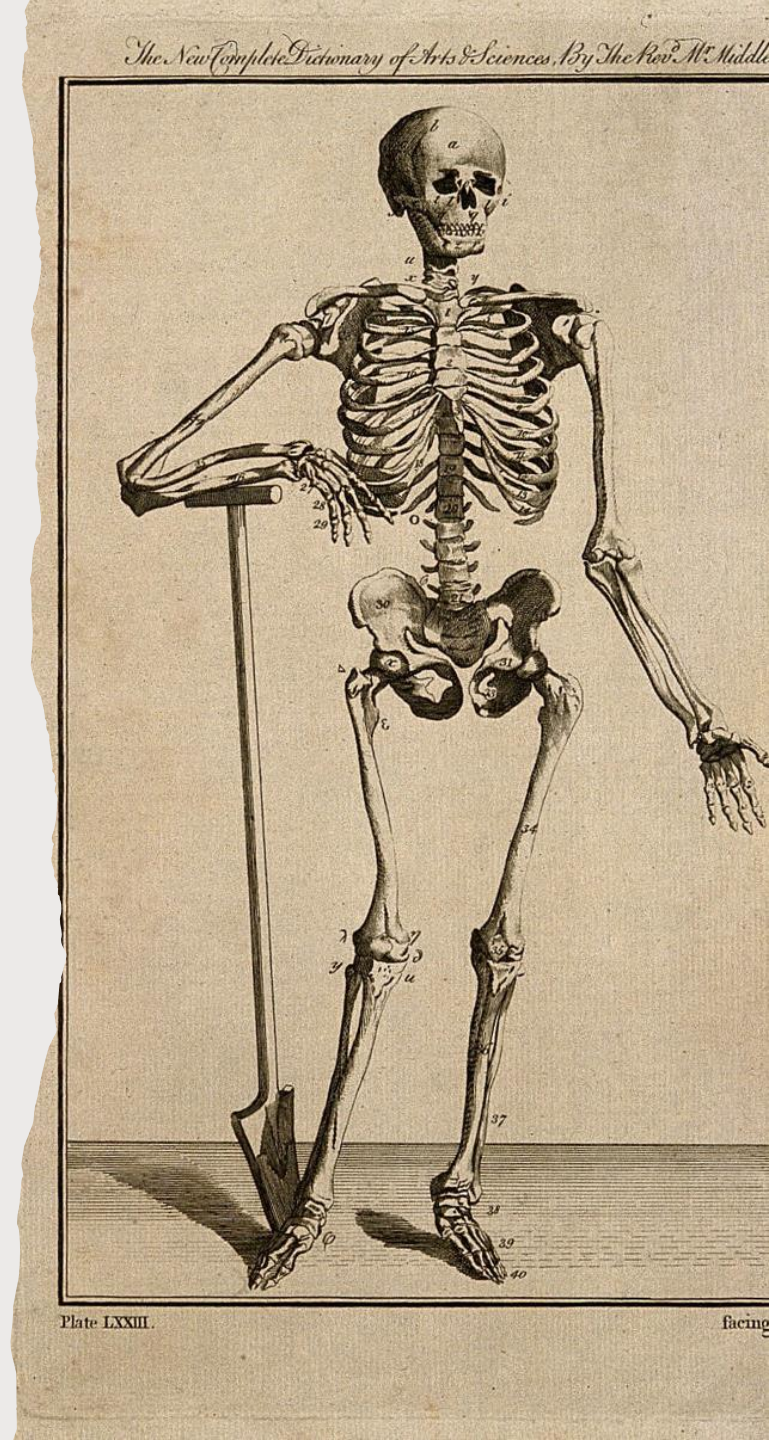






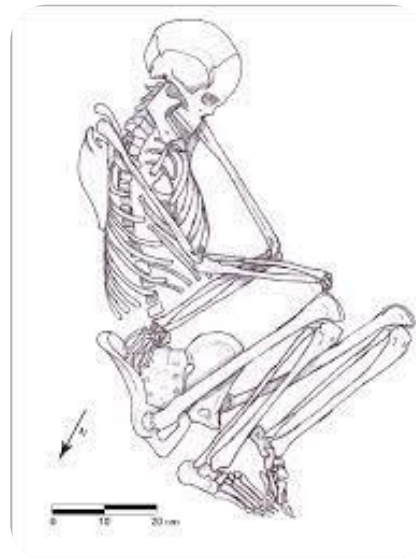
Human remains

- 1. Documentation
- 2. Collection
- 3. Evaluation



1. Field Documentation

- Create detailed maps, sketches, and photographs to accurately document the position and arrangement of the skeletal elements.
- Use scales, grids, and reference points to establish measurements and ensure proper spatial documentation.







1. Field Documentation

Anthropological field research form
Created by Erika Průchová 2013

Site: _____ **Skeleton:** _____
Excavation unit: _____ **Date:** _____
Square: _____ **Examined by:** _____

1. **grave pit:** detected not detected whole part

2. **pit dimensions:** length: _____ width: _____ depth: _____
 3. **individuality:** single multiple: ...

4. **disposal:** primary secondary undetermined
 intact damaged: ...

5. **construction elements:** wood: ...
 nail stone: ...
 undetected other: ...

6. **documentation:** photography drawing

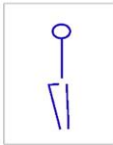
7. **skeleton:** unpreserved preserved completely
 preserved parts: ...

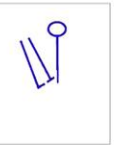
8. **body orientation (head-foot):** _____ **facing:** _____

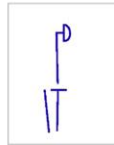
9. **length of the skeleton:** _____

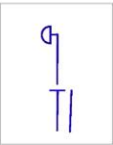
10. **position:** dorsal lateral dx / sin ventral
 undetermined extended flexed

11. **position of upper limbs:** _____ **position of lower limbs:** _____
 dx sin dx sin









12. **position of skull:** base os occipitale face
 os temporale dx / sin os parietale dx / sin
 undetermined displaced other:

13. **measured lengths of the long bones:** _____

14. pathological observations and anomalies:

15. **age at death:** fetus/neonatus infans juvenis adultus
 maturus senilis adultus-senilis

16. **sex:** female male indifferent unestimate
 Methods used for estimation: Bruzek 2002 Buikstra – Ubelaker 1994

17. articulation of selected joints:

evaluated connection	unilateral	dx	sin	evaluated connection	unilateral	dx	sin
Ve C3-C7				occip-C1			
cost-vert				Hu-Ra, UI			
carpal				Sc-II			
carpal-MC				fem-tib			
Ph hand				tarsal			
pubic symph				temp-mand			
fem-acet				talus - calcan			
tarsal-MT							

Legend: **AC** = articulation close; **AL** = art. loose; **DA** = disarticulated; **NP** = not present/undetected

18. **taphonomy:** „wall effect“:
 Segmentation of the spine: yes no undetermined undetectable
 Jaws: pressed slightly pressed extended DA NP
 Flattening of the rib cage: no slightly unilateral slightly bilateral
 extended unilaterally extended bilaterally competely flattened undetectable
 Position: patella dx: _____ patella sin: _____

19. notes:

.....

.....

.....

20. grave goods and its location:

1. Field Documentation:

FICHE DE CONSERVATION : SUJET IMMATURE

Année: Site: N° squelette: N° opération:
 Auteur:

CONSERVATION OSSEUSE

Région présente et identifiée avec certitude
 Région fragmentée
 Situation exacte inconnue avec certitude
 Droite ou Gauche ?

LEGENDE DES DIAGRAMMES DENTAIRES

Germe présent in situ
 Germe présent mais isolé
 Un de ces élément est présent
 L'identification de l'élément isolé n'est que supposée
 Elément présent in situ
 Elément isolé présent et identifié avec certitude
 Agénésie dentaire
 Dent perdu ante mortem (Résorption alvéolaire)

Commentaires

Cervicales Thoraciques Lombaires

Sép. intacte Esp. vide
 Sép. remaniée Esp. colimaie
 Sép. détruite ?

U.P.A. 376 CNRS d'après T. S. Constantinides-Wieslmann et C. M. Kelleher, modifié par P. Cournaud, H. Duday et M. Guillon. Informatisation M. Caucureau (AFAN)

Crâne

Face d'apparition
 Indiquer l'ordre par un n°

Antérieure	Postérieure	Crâne Atlas	Crâne Axis	Crâne Mandib.
Supérieure	Inférieure	Étroite		
Latérale G	Latérale D	Lâche		
		Déplacée		

Position du crâne

Primaire
 Secondaire
 ?

Coussin funéraire

Surélévation

RACHIS cervical

Connexions

Étroites Lâches Déplacées

thoracique

Connexions

Étroites Lâches Déplacées

lombaire

Connexions

Étroites Lâches Déplacées

sacro-coccygien

Connexions

Étroites Lâches Déplacées

Thorax

Connexions

Étroites Lâches Déplacées

Mise à plat

Complète Incomplète

Ceinture scapulaire

Connexions scapulo-humérales

Étroites Lâches Déplacées

Compression

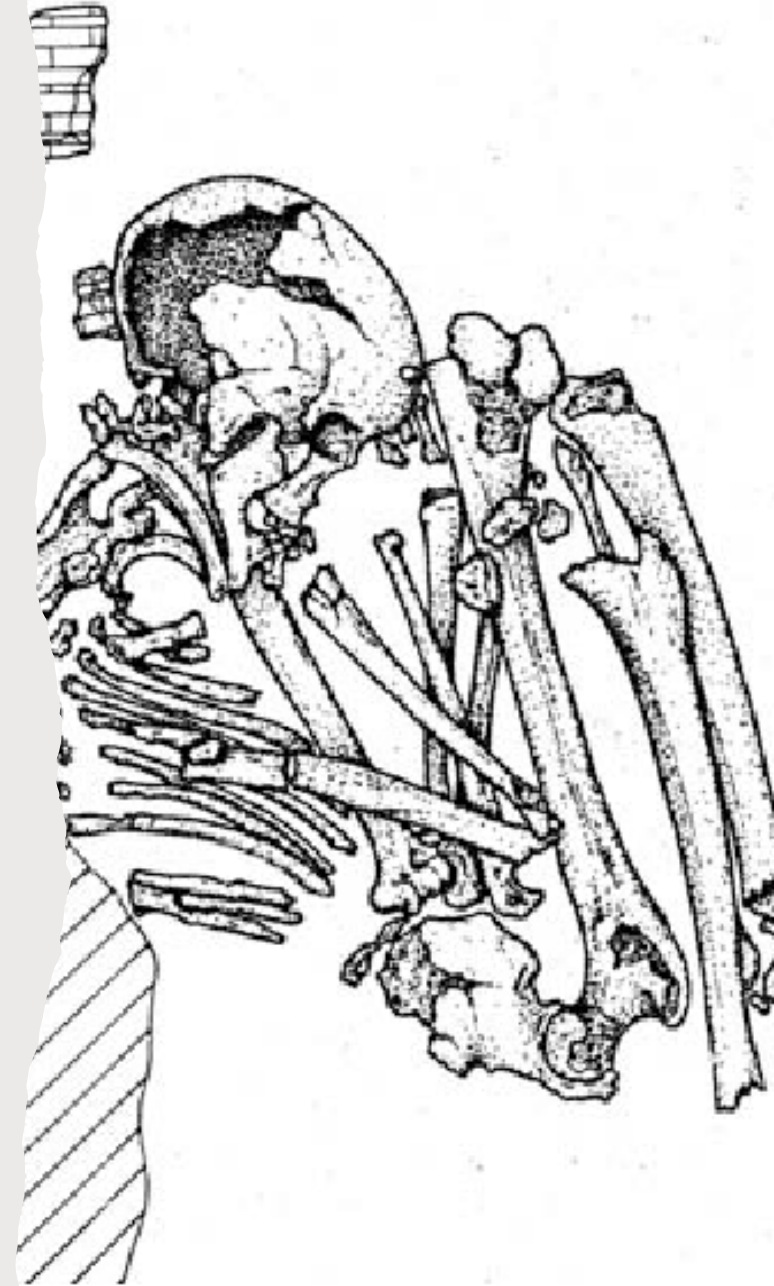
Oui Non

Position clavicules

P. COURNAUD U.P.A. 376 CNRS d'après T. S. Constantinides-Wieslmann et C. M. Kelleher

Archaeoethanatology

- *“A multi-disciplinary approach in archeology, that studies funerary rituals in the past”*
- Based on knowledge of natural decay processes, the method has made it possible to reconstruct in detail how humans have historically dealt with their dead





How to **reconstruct** a burial?

Define if it is :

1. Primary or secondary?
2. Single, multiple or collective burial?
3. Decomposition in a void or a filled space ?



1. Field Documentation:



Hamoukar Expedition

Locus Database (default sheet)

locus identification Browse Find Add Delete flag

menu items new items Browse Omit Omitted Sort Unsort

Season Area Square Operation

Locus Number date opened date closed excavator


basic data stratigraphic placement description supplementary information field records

Burial 144 was found adjacent to 135 (to the south) and 126 (to the east). It appeared to be continuous with 135, and may have been-- if all the burials were included in the same cut, which remains a possibility-- continuous with 126, 130, 133, 127, 146, and 174 as well.


Like the others, 144 was pointed North. it had fewer inclusions, however, including two jars. The fill for the burial was mixed ashy and m.b. collapse and wash, and contained a few potsherds and animal bones-- these are of tertiary context, like the other burials.

texture

field photos lots objects



IMG_0973.JPG



IMG_0975.JPG

1. Field Documentation:

burial	
Location	Location and stratigraphic relationships
Tomb	Orientation, architectural form and nature of the filling.
Elevation (m)	The highest and lowest points of the burial.
Dating	Phase et stratum.
human remains	
Preservation	Good, average or bad.
Description	Relative positioning by anatomical segment (skull, vertebrae and thorax, shoulder girdle, arms, pelvic girdle and legs) noting the presence or the absence of the anatomical joints.
Body orientation	From head to feet.
Biology	Estimation of age and determination of sex.
grave goods	
Nature and quantity of offerings, position in the tomb and in relation to the corpse.	
taphonomical analyses and interpretation	
Discussing (based on the previous description of the human remains) the corpse taphonomy, defining the type of the funerary deposits, analysing the environmental conditions within the burial, exposing the differences between the original burial and the form of the deposit observed at excavation	

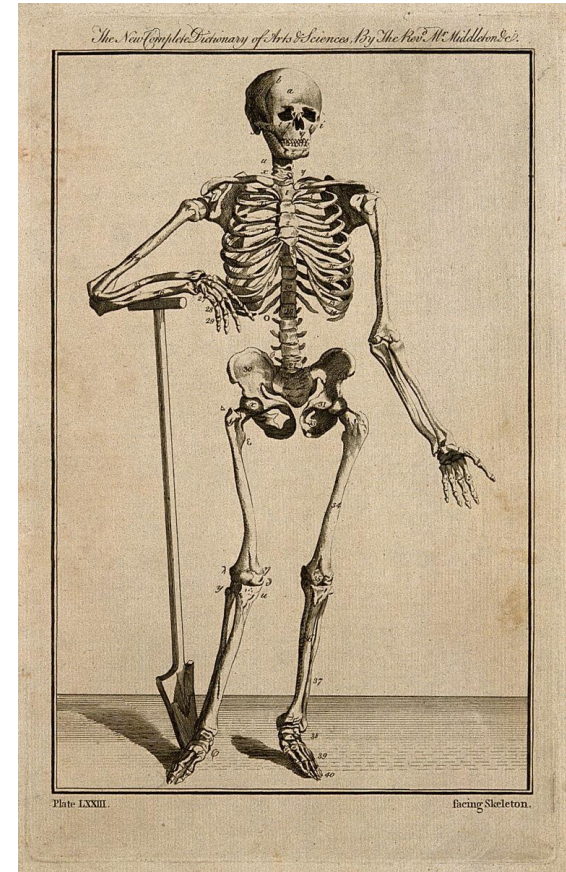
Human remains



1. Documentation

2. Collection

3. Evaluation



2. Collection of Samples



- Take samples from the gut area of the skeleton and the pelvic/between femurs (microbial & Parasitology).
- If necessary, collect samples for further analysis, such as DNA extraction, stable isotope analysis, or radiocarbon dating.
- Follow established protocols for sample collection to ensure preservation and prevent contamination.

2. Collection of Skeleton (Lifting)

- At this point you need to remove as much soil as possible (except where mentioned above) from the bones before lifting them out of the ground.
- This relieves the bone you're lifting of any pressure of resistance from the surrounding soil and the bone is much less likely to break.





Lifting the Skeleton



Start

Start removing the bones in the same order you excavated them in, starting with the skull and working down.

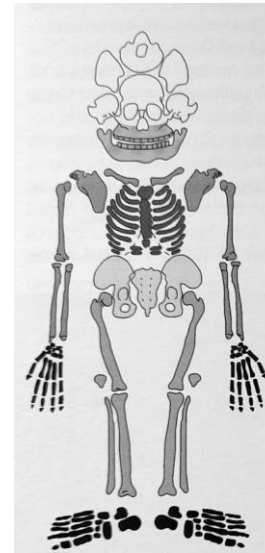
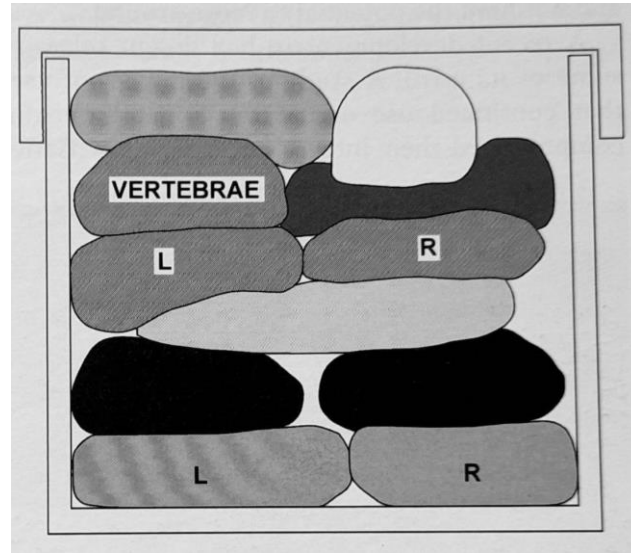
Wrench

Never wrench bones out of the ground: always ensure you have removed enough soil to remove the bones freely.

Bag

Bag the bones up as you lift them with the appropriate labels, keeping left and right side limbs separate.

How to pack a skeleton



- ✓ Never pack the skull, maxilla & mandible at the bottom of the box
- ✓ Heavy bones go first
- ✓ Loose teeth, maxillae & mandible should be bagged separately and not with the heavier cranial vault
- ✓ Pathological bones & fragile maxillae should be wrapped in acid-free tissue paper

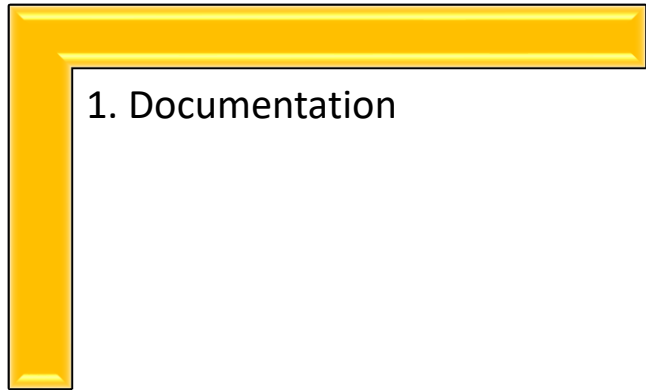


Transportation

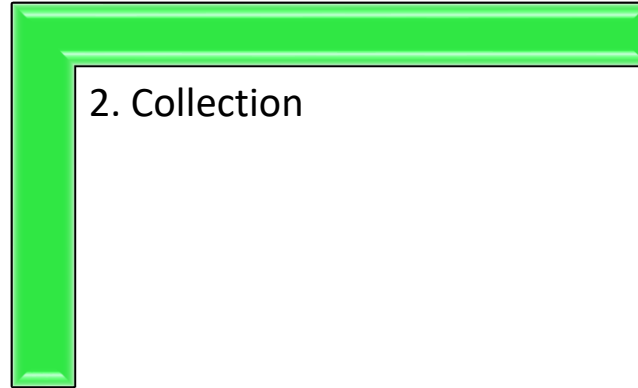


- Toss bones in the back of a car or truck without proper packing
- Pack a series of skeletons in one large container
- Pack rocks or heavy artifacts on top of bones

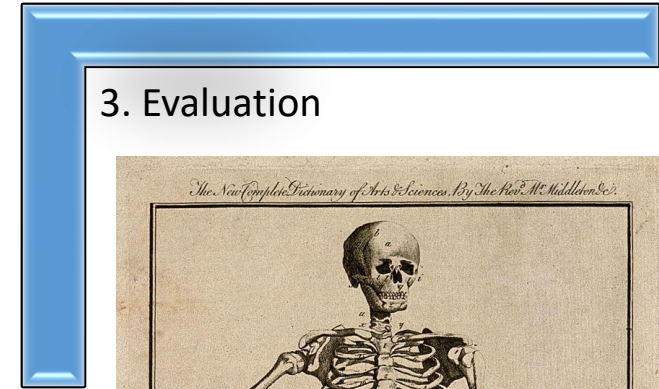
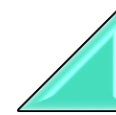
Human remains



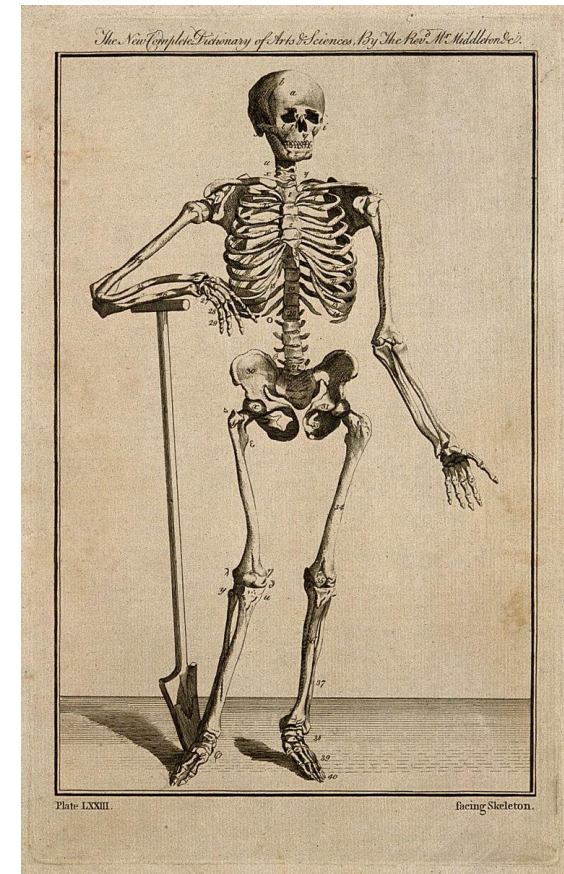
1. Documentation



2. Collection



3. Evaluation



3. Evaluation

Do not wash	the teeth
Do not extract	the teeth
Do not damage	joints by rough brushing
Do not wash	more than one skeleton at a time



3. Evaluation



Fill in broken areas with plaster or plastic wood



Cover bones with oil, paint or shellac



Glue together unclean edges

~~NEVER~~



Final note

It's **important to note** that the evaluation of human remains should be carried out by trained professionals (archaeologists or anthropologists) who possess the necessary expertise to handle and analyze skeletal material.

Additionally, adherence to legal and ethical guidelines is crucial when working with human remains.



Thank you and enjoy the excavation

