Forensic Anthropology

Dr Laura Sinfield

L.N.Sinfield@ed.ac.uk

Forensic Anthropology

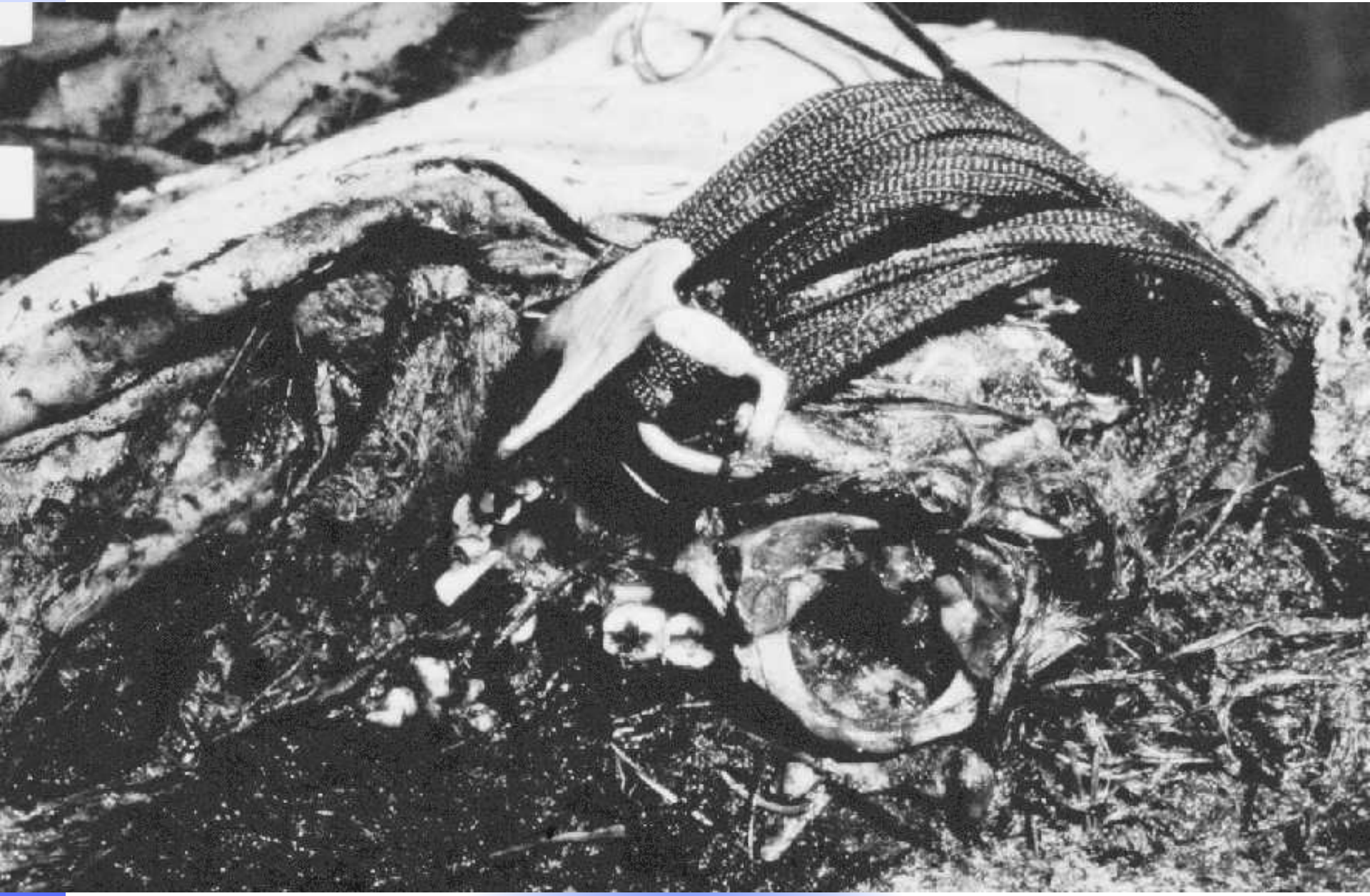
- In the UK, most commonly used for identification of human remains which have not been identified by other methods
- Can also be used to aid in identifying cause of death
- In the UK in recent years, most commonly carried out by forensic anthropologist
- In rest of Europe and in past in UK, carried out by forensic pathologists, etc.

L.N.SINFIELD@ED.AC.UK

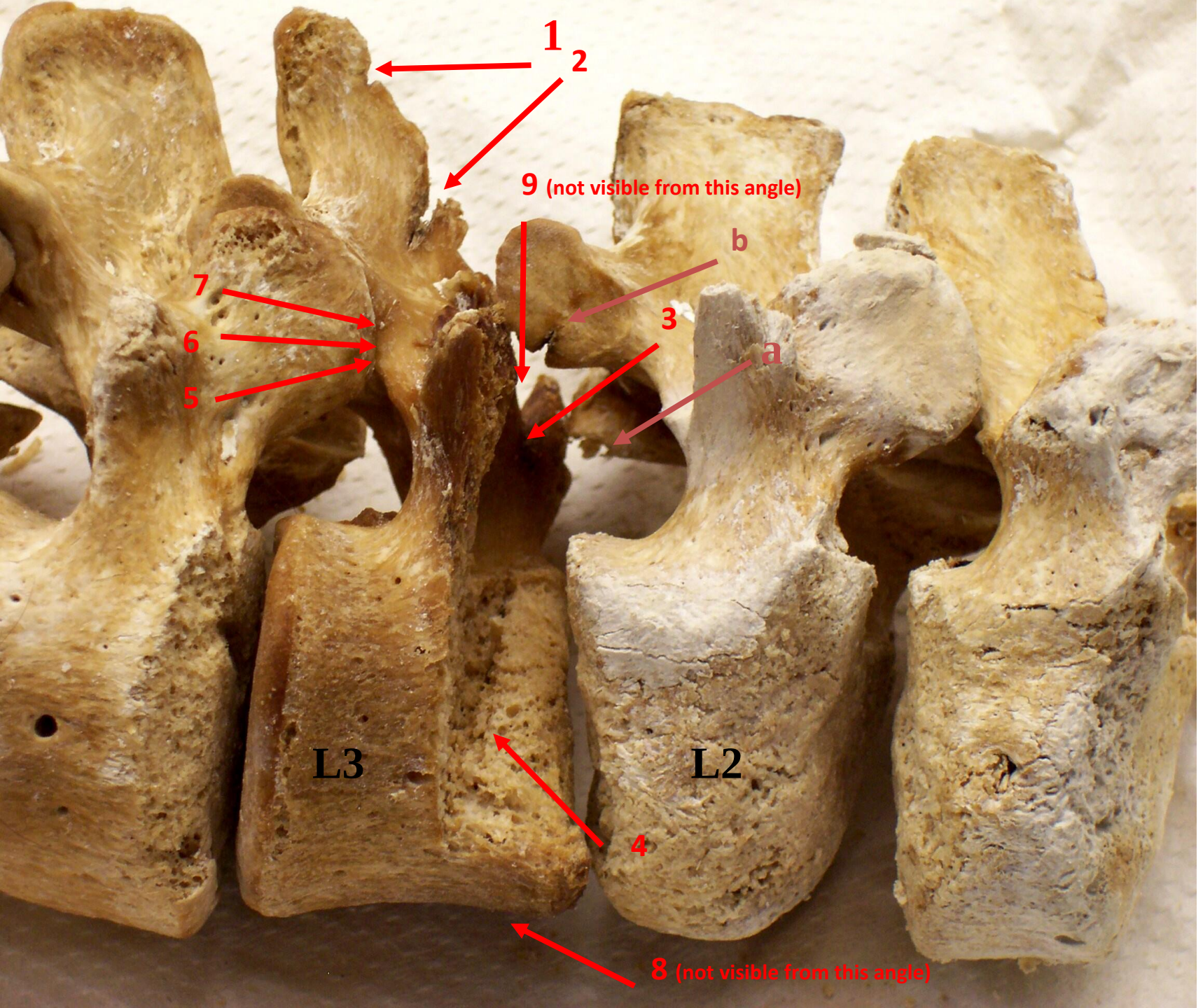
L.N.SINFIELD@ED.AC.UK

L.N.SINFIELD@ED.AC.UK

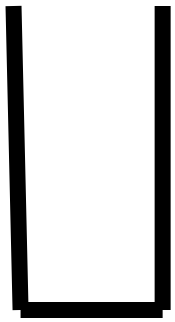
L.N.SINFIELD@ED.AC.UK



L.N.SINFIELD@ED.AC.UK


1
2
9 (not visible from this angle)
b
7
6
5
3
a
L3
L2
4
8 (not visible from this angle)

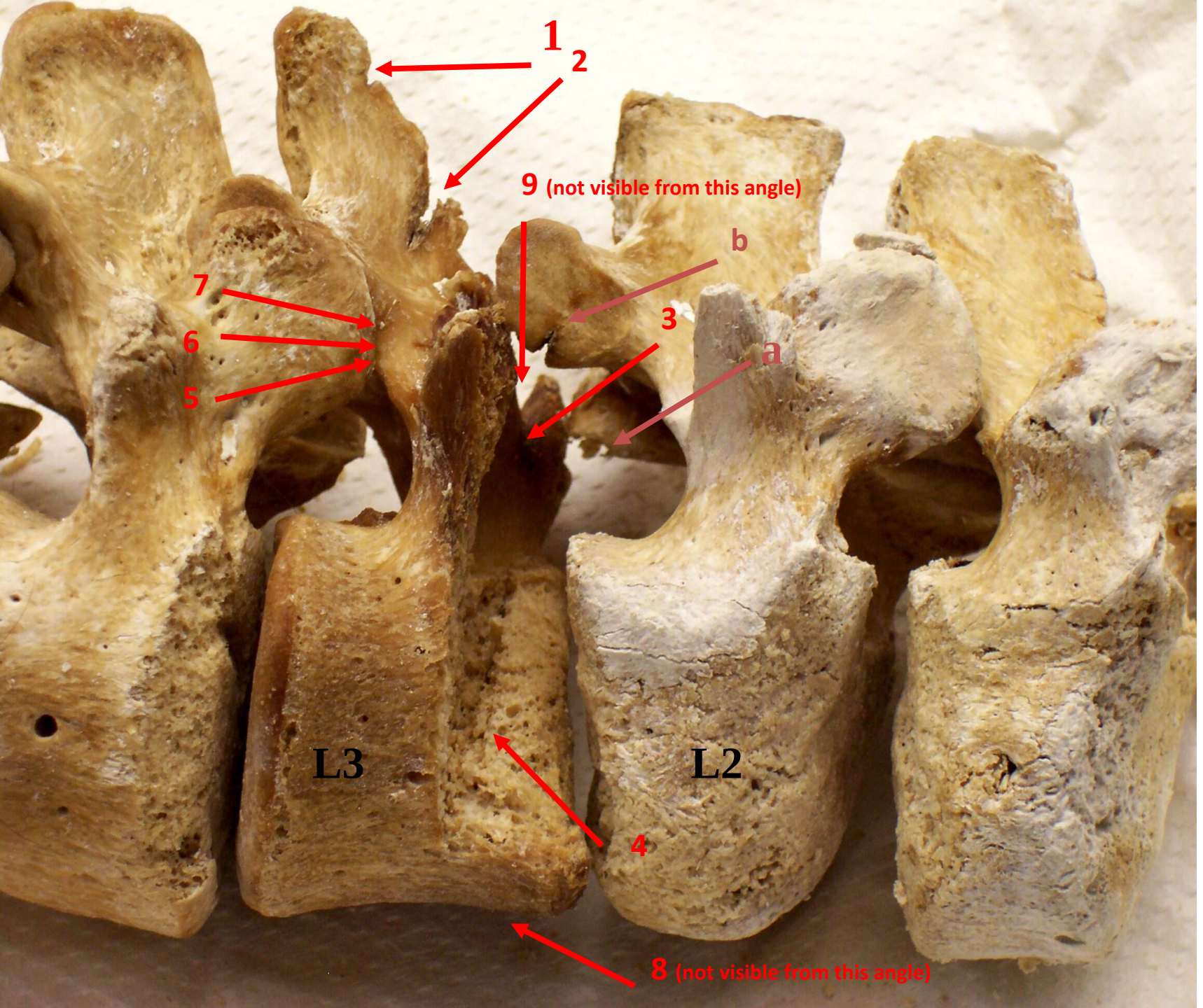
Tool-marks



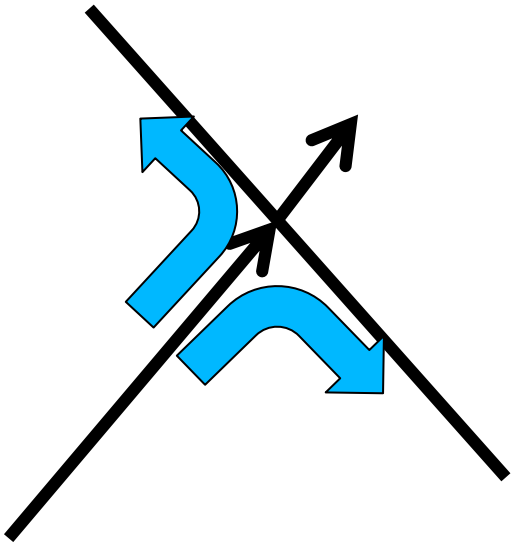
Saw-type

Knife-type

L.N.SINFIELD@ED.AC.UK


1
2
9 (not visible from this angle)
b
7
6
5
3
a
L3
L2
4
8 (not visible from this angle)

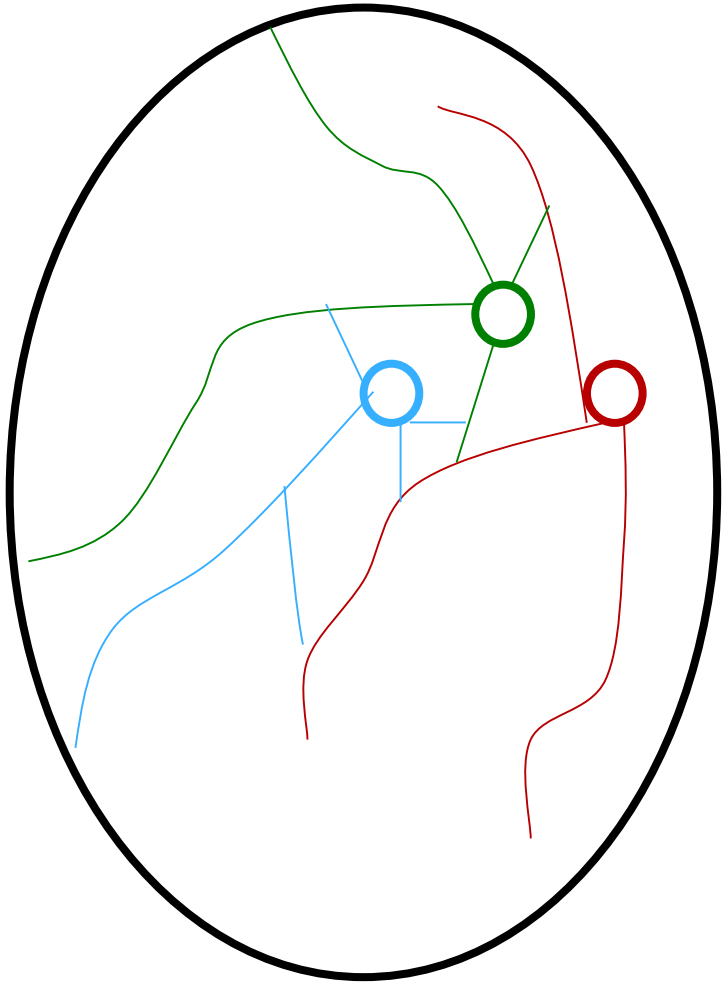
Cranial fractures - radiating



- Near-instantaneous
- Unable to cross an existing fracture-line

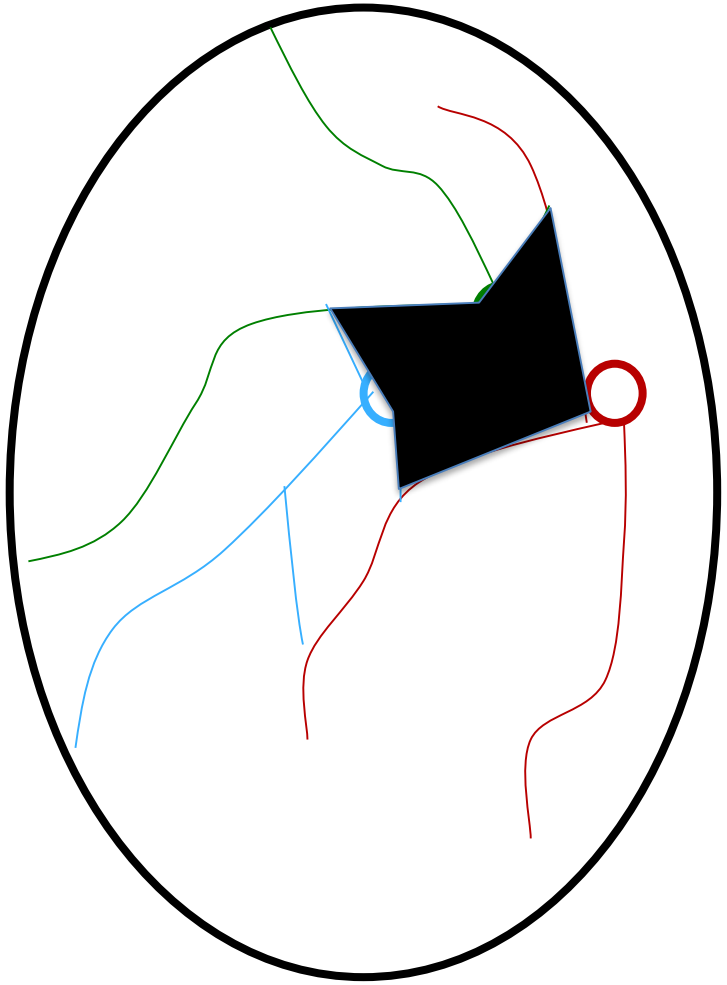
L.N.SINFIELD@ED.AC.UK

Order of defects (a)



L.N.SINFIELD@ED.AC.UK

Order of defects (b)

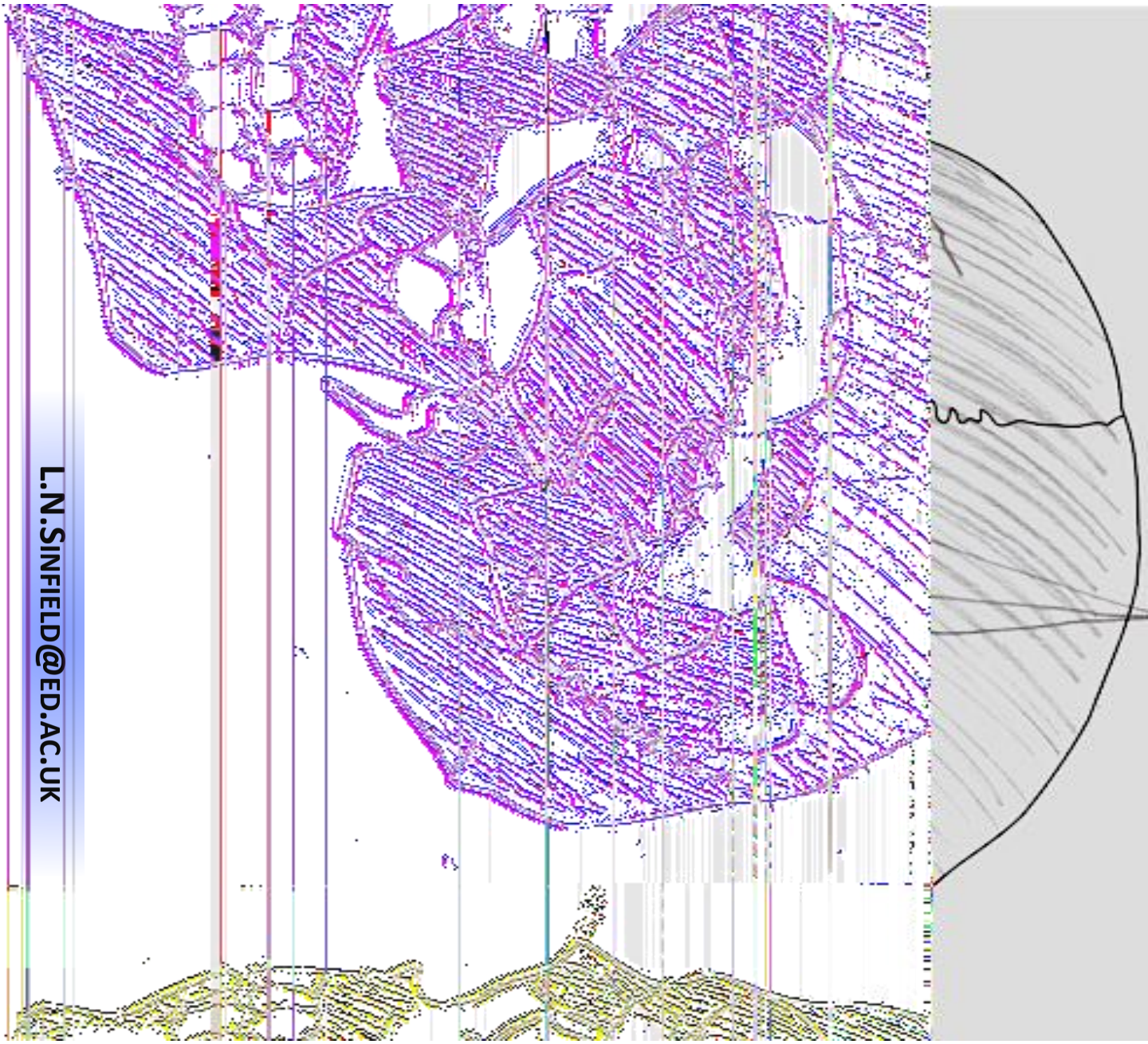


L.N.SINFIELD@ED.AC.UK

(Not the case in next slide, but similar)

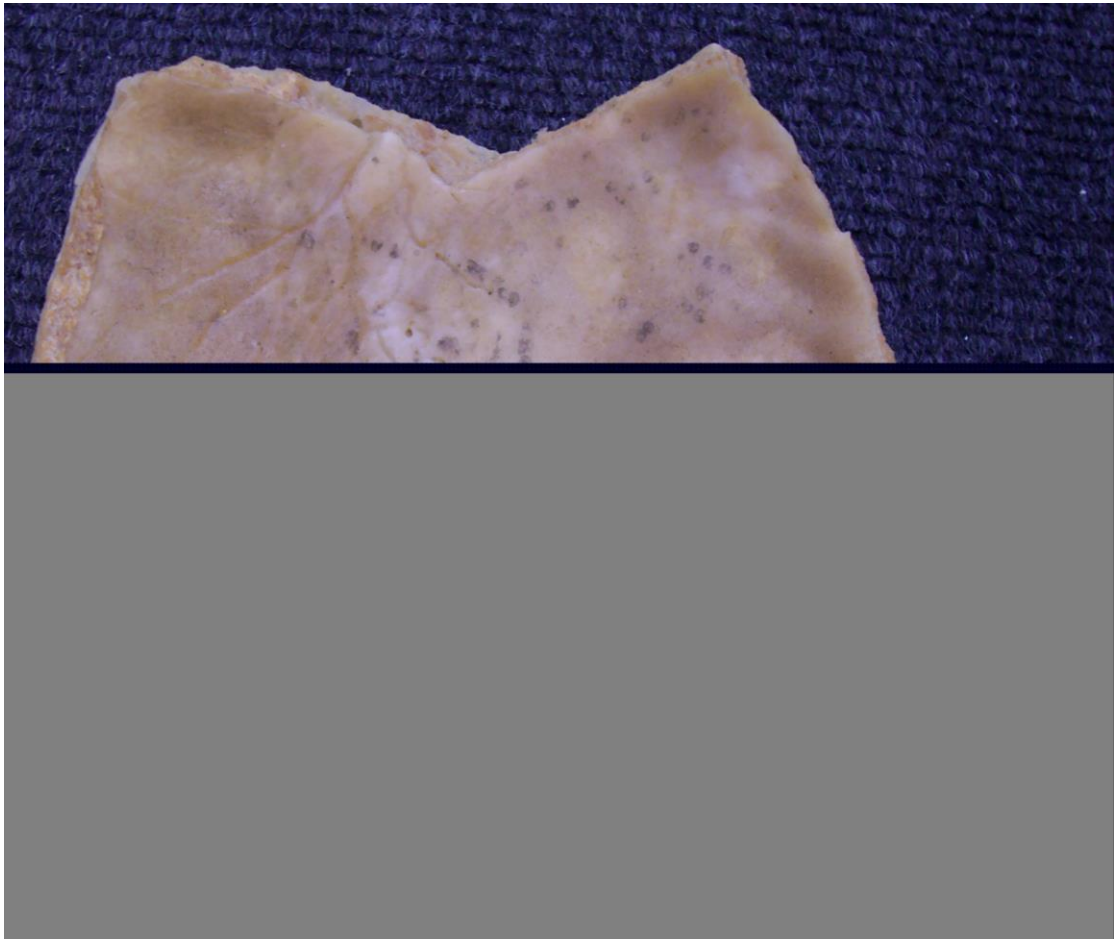
L.N.SINFIELD@ED.AC.UK

SAH - Dundee 2017: Forensic Anthropology

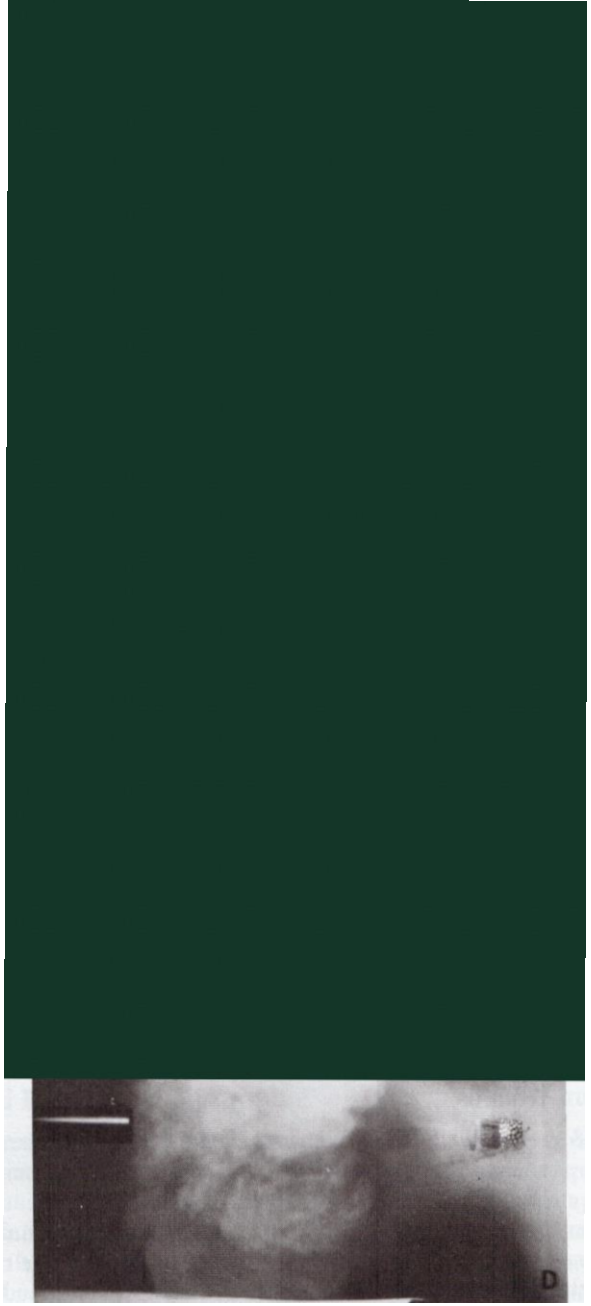


L.N.SINFIELD@ED.AC.UK

Cause of Death –
and an indicator of Manner of Death



L.N.SINFIELD@ED.AC.UK



L.N.SINFIELD@ED.AC.UK

L.N.SINFIELD@ED.AC.UK

Thin Section

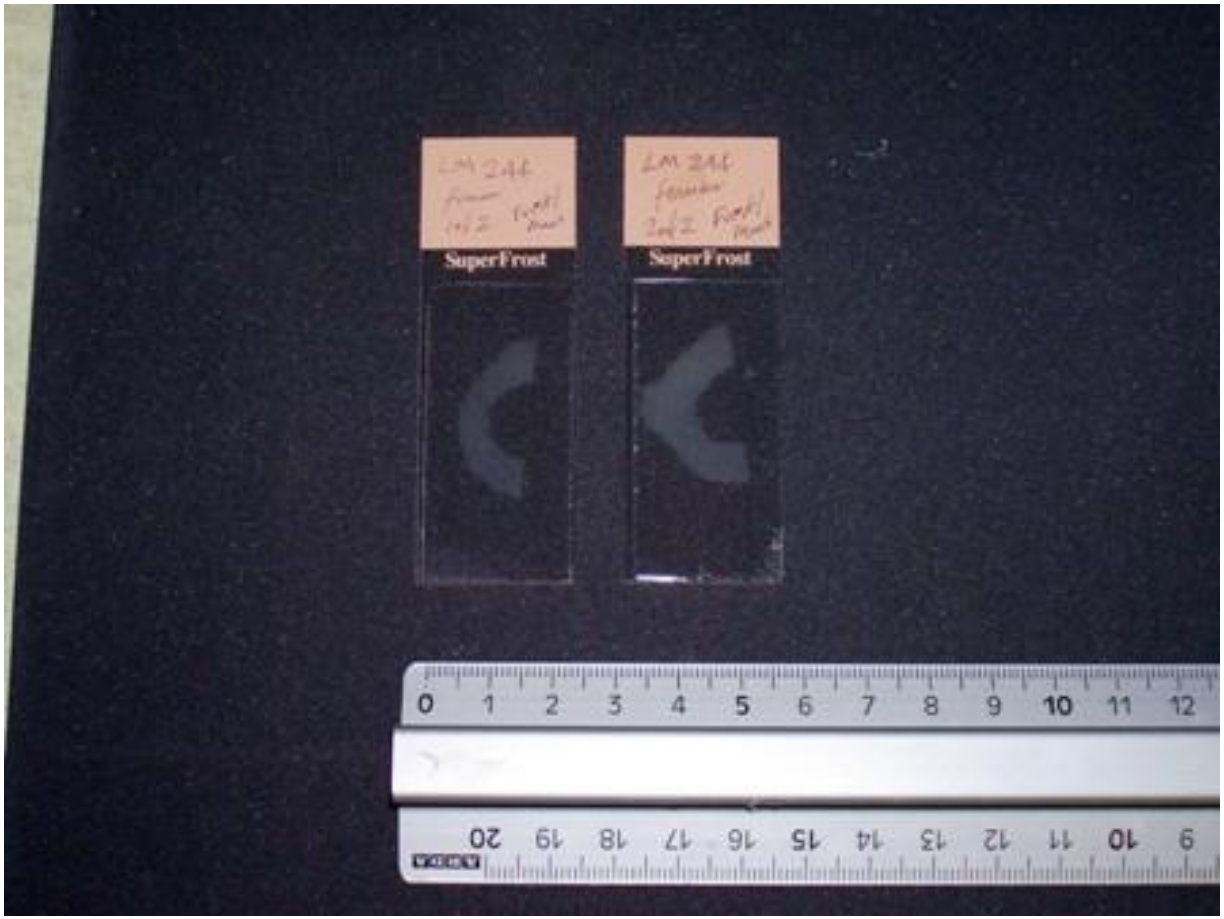
- No need for de-calcification in some circumstances
- Fast and simple

L.N.SINFIELD@ED.AC.UK

Osteon Counting: Thin Section Preparation

L.N.SINFIELD@ED.AC.UK

L.N.SINFIELD@ED.AC.UK



L.N.SINFIELD@ED.AC.UK

Forensic histology & bone

- Species differentiation
  - Primate/non-primate
  - Human/other primate
- Age estimation
  - Osteon counting
- Post mortem interval
- Bony response to injury

L.N.SINFIELD@ED.AC.UK

Osteons and socio-economic status

- Keough et al FSInt 2009
- Osteon:age relationship may be affected by socio-economic status
- Call for ‘databank’ of known-individual samples to be built up

L.N.SINFIELD@ED.AC.UK

Histology & Injury response

- Histological signs of bony response to injury – especially in children
- Cattaneo et al 'The Detection of Microscopic Markers of Hemorrhaging and Wound Age on Dry Bone: a Pilot Study' AJFMP 2010 31(1):22-26

- "A total of 6 samples of fractured bone (cranium, rib, and tibia) were taken from cadavers with known time of survival between trauma and death. Time intervals ranged from a few seconds after the bone fracture had been inflicted, to several hours, days, and weeks. A negative control was included (postmortem fracture)"

L.N.SINFIELD@ED.AC.UK

L.N.SINFIELD@ED.AC.UK